National Aeronautics and Space Administration

BUDGET ESTIMATES

FISCAL YEAR 1976

Volume III

RESEARCH AND PROGRAM MANAGEMENT

SPECIAL ANALYSES

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1976 ESTIMATES

RESEARCH AND PROGRAM MANAGEMENT

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RESEARCH AND PROGRAM MANAGEMENT

FISCAL YEAR 1976 ESTIMATES

GENERAL STATEMENT

The Research and Program Management appropriation funds research in Government laboratories, management of programs, and other agency activities. Principally, this appropriation provides for (1) the civil service staff needed to perform in-house research, and to plan, manage, and support the Research and Development programs; and (2) the other elements of operational capability of the laboratories and facilities such as utilities, logistics support (travel and transportation, maintenance, and operation of facilities), and technical and administrative support.

The in-house personnel funded by the Research and Program Management appropriation are engaged in research and technology, and direct and indirect support of project work. Over three-fourths of this appropriation is required to cover salaries and related costs of these employees. The balance, consisting of travel, facilities services, technical services, and administrative support of all NASA installations, provides the test and operational facilities support and related goods and services which make possible the efficient accomplishment of NASA's approved missions.

Management of Installations

The future of our aeronautics and space activities depends on the strength of our most important resource -- the approximately 24,000 people located at our various centers and installations. We intend to keep this resource viable and young in spirit, second to none in science, research, development and technology. To improve the overall effectiveness and economy of centers' operations, in March 1974 management of field operations was assigned to the Associate Administrator for Center Operations. Thus, responsibility was consolidated for overall planning and direction of NASA's field center operations in one senior line official.

In addition to this change, the National Space Technology Laboratories (NSTL), which was formerly a component facility of the Marshall Space Flight Center, was created as a separate NASA facility. This action was taken to recognize the diverse, multiprogram character of activities carried on there by several Federal agencies, and to provide the necessary focus on support to these diverse activities.

Summary of Changes - 1975

Since NASA's preparation of the 1975 budget and subsequent to final action by the Congress, several significant events have occurred that bear on the current operating budget.

The amount appropriated for Research and Program Management (R&PM) was $740,000,000, a reduction of $9,624,000 from the budget request. Congress also provided appropriation transfer authority to allow NASA to properly balance the R&D and R&PM efforts. Under this authority R&PM funds have been increased by $5,200,000 to provide the minimum funding level necessary to support adequately the approved research and development programs and projects. As a result of the transfer from R&D, the budget plan is increased to $745,200,000. Including the anticipated supplemental appropriation to cover the October 1974 pay raise, the operating budget for 1975 is $765,175,000.

In September 1974, as an element of his actions against inflation, the President directed a Government-wide reduction in manpower. NASA's share of that reduction was 300 positions. This reduction is being taken through normal attrition at all centers except Marshall Space Flight Center, where a reduction in force had already been planned. It is estimated that the savings resulting from this 300-man reduction will be approximately $425,000 in 1975.

A general pay raise of 5.5% was implemented by Executive Order in October 1974. The estimated additional 1975 cost of the revised salary rates is $19,975,000, for which no provision was made in the Agency's 1975 budget request. A supplemental appropriation has been requested to cover these costs.

Section 205 of the Supplemental Appropriation Act, 1975, P.L. 93-554, limits Federal travel expenses. The effect of this legislation is to reduce travel by 5% from the 1975 budget estimate. This reduction amounts to $822,000, resulting in an operating budget for 1975 of $15,622,000 for travel.

The operating budget, therefore, includes the net effect of Executive and Legislative actions on increased salaries, and reductions in personnel and travel. The operating budget also includes absorption of other unbudgeted requirements such as increases in utility rates, airline fares, support contract wage rates and prices of supplies, materials, and equipment.

Summary of Changes - FY 1976

The budget for 1976 is $776,000,000, an increase of $10,825,000 over the revised plan for 1975. The 1976 estimate provides for the full year effect of increased utility rates which continue to rise more rapidly than conservation efforts can offset. Additionally, continued increases in wage rates as well as in the cost of materials are provided for. Personnel compensation estimates include the net cost of the full year effect of the October 1974 pay raise, offset by the full year effect of the 1975 300-position reduction.

SUMMARY OF 1975 CURRENT ESTIMATE AND 1976 ESTIMATE

	1975 Current Estimate	1976 Estimate
Budget request	$749,624	
Congressional action	-9,624	
Appropriation	740,000	
Appropriation transfer for minimum requirements	+5,200	
Plan, prior to October 1974 pay raise	745,200	$748,000
Effect of October 1974 salary rates	+19,975	+28,000
Plan, based on October 1974 salary rates	$765,175	$776,000
Proposed supplemental appropriation to cover FY 1975 deficiency	$19,975	

Transition Period Budget

The budget request for the transition period provides for continuation of acitivities at the FY 1976 level.

Summary of Obligations by Function

The table below summarizes requirements by functional category:

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
Personnel and related costs	$573,182	$579,065	$591,915	$597,513	$156,759
Travel	15,507	16,444	15,622	17,001	5,065
Facilities services	74,822	79,349	83,087	85,590	28,850
Technical services	36,712	34,261	32,846	33,871	10,230
Administrative support	43,745	40,505	41,705	42,025	12,896
Total	$743,968	$749,624	$765,175	$776,000	$213,800

The Research and Program Management appropriation request may be categorized into five functional areas as follows:

1. Personnel and Related Costs includes salaries and benefits for civil service personnel, and for personnel of other government agencies detailed to NASA. This category also includes supporting personnel costs, such as the costs of moving expenses (excluding travel of personnel), recruiting and personnel investigation services provided by the Civil Service Commission, and personnel training. The major factor contributing to the increase in the 1975 current estimate over the 1975 budget estimate is the October 1974 pay raise cost of $19,975,000.

The 1976 increase results from the annualization of the October 1974 pay raise as well as the costs for statutory within-grade increments and career promotions. This is partially offset by annualized savings from the reduction of 300 positions in FY 1975.

2. Travel includes the cost of transportation, per diem, and other associated expenses required for direction, coordination, and management of research and development and construction of facilities program activities; for contract management and flight mission support; for overseas travel to launch and tracking sites; for travel to meetings and technical seminars; and for all local and relocation travel expenses. The 1975 current estimate is $822,000 less than the 1975 budget estimate. This results from the Government-wide reduction required by the Supplemental Appropriation Act, 1975. The net effect of this amendment is to reduce travel costs by 5% from the 1975 budget estimate. Travel requirements for 1976 are estimated at the 1975 level, adjusted to take into account increased air fares.

3. Facilities Services includes rental of real property, the cost of maintenance and related services, custodial services, minor modifications, utilities and facility operations. The increase in the 1975 current estimate as well as in the 1976 estimate is primarily attributable to wage escalation, utility rate increases and higher supplies and materials costs.

3. Technical Services includes the cost of general purpose automatic data processing, institutional engineering services, the dissemination of scientific and technical information derived from the various research and development programs, and educational/informational program activities. The reduction from the 1975 budget estimate to the current estimate is the result of deferring planned equipment acquisitions to provide for unavoidable wage and price escalation. The FY 1976 level of effort is planned at the 1975 level; however, wage rate increases on existing contracts will raise costs for 1976.

5. Administrative Support includes the cost of communications, administrative printing, administrative supplies, general purpose materials and equipment, transportation support (excluding movement of personnel), and other support activities. The 1975 current estimate is greater than the

budget estimate because of higher prices for supplies and materials and communications rate increases. The increases planned for 1976 reflect full year costs of communciations rate and contractor wage increases.

The content of these functions is explained in mare detail in the following pages. The detailed requirements for each installation are covered in their respective sections of this presentation.

PERSONNEL AND RELATED COSTS

A. COMPENSATION AND BENEFITS

1. Compensation

a. Permanent Positions: This category of personnel costs covers the salaries of permanent civil service employees, and is the largest part of personnel and related costs. The funds shown will support the civil service complement of 24,316 at the end of FY 1975 and FY 1976. The estimate for permanent compensation is based upon the position structure at the start of the year, as modified by the addition of new positions, within grade advances, career development, etc.

b. Nonpermanent Positions: The nonpermanent position category covers the salaries of nonpermanent employees participating in the College Cooperative Training, Summer Employment, Youth Opportunity and Temporary Clerical programs.

The College Cooperative Training program provides alternating work and study periods providing the student with practical experience and academic training. This program permits many students to attend college who could otherwise not afford to by providing them an income during their work period. This program has been a principal source of recruitment for young and experienced professional personnel.

The Summer Employment program employs high school and college students and faculity members, and in consonance with the Federal Government policies and objectives provides them an insight into government operations. The agency benefits from the employment of these highly skilled and motivated individuals.

The Youth Opportunity Campaign program is conducted within the national policy which enables disadvantaged youths to work at unskilled jobs both during the summer and throughout the regular school year.

The Temporary Clerical program is necessary to provide short-term support in positions occupied by permanent employees who are absent from work because of illness, vacation, maternity, or training.

c. Reimbursable Details: In accordance with existing agreements, NASA reimburses the parent Federal organization for the salaries and related costs of the detailees to NASA.

d. Overtime and Other Compensation: Overtime, holiday pay, post and night work differential, and hazardous duty pay are paid from this category.

2. Benefits

In addition to compensation, NASA makes an employer's contribution to personnel benefits as authorized and required by law. These benefits include contributions to the Civil Service Retirement Fund, employee life and health insurance, and social security contributions for nonpermanent employees. The incentive awards provide cash awards for outstanding achievements by NASA employees, superior performance awards and for improvements of a center's operations. Payments for severence pay are made to former employees involuntarily separated through no fault of their own.

B. SUPPORTING COSTS

1. Transfer of Personnel

Relocation costs, such as the expenses of selling and buying a home, and the movement of household goods are provided under this category.

2. Civil Service Commission Services

The Civil Service Commission is reimbursed for security investigations on new hires for the entire agency, for recruitment adversiting, career-maturity surveys, and any requested investigation of formal discrimination complaints.

3. Personnel Training

Training is provided within the framework of the Government Employees Training Act of 1958. Part of training consists of courses offered by other Government agencies, usually for a fee, and the remainder is provided through nongovernment sources.

TRAVEL

A. Program Travel

The largest individual part of program travel is for direction, coordination and management of program activities. Because of the programs and the geographical distribution of NASA centers and contractor and subcontractor effort throughtout the entire United States, coordination and management of activities require frequent review by prosonnel with program responsibility.

As projects reach the flight stage, support is required for prelaunch and postlaunch activities, including overseas travel to launch and tracking sites. The amount of travel required for this purpose is directly related to both the number and complexity of the launches.

B. Administrative Travel

Administrative travel includes travel for the direction and coordination of general management matters and travel by senior officals to review requirements and operations. It includes travel by functional managers in such areas as personnel, financial management, and procurement. This category also includes the cost of travel in and around the centers, including bus and taxi services and rental of motor vehicles; travel of unpaid members of research advisory committees; initial duty station, permanent change of assignment, and other family travel expenses; local transportation; rental of passenger-carrying motor vehicles; and travel of non-NASA employees.

C. Meetings and Technical Seminars

Travel to meeting and technical seminars permits employees engaged in program activities to participate at both government-sponsored and non-government-sponsored meetings and seminars with other representatives of the aerospace community. This participation allows personnel to benefit from exposure to advances in the field which arise outside NASA, as well as allowing personnel to present both accomplishments and problems to their associates. Many of the government-sponsored meetings are made up of working panels convened to solve certain problems for the benefit of the government.

FACILITIES SERVICES

A. Rental of Real Property

This category covers costs for rental of land and property to house personnel and provide storage and warehouse space for equipment, supplies, and materials where space is not available in government-owned facilities; and as a new requirement effective July 1, 1974, reimbursement to GSA for governement-owned or leased space including office buildings in Washington D.C., under the control of and provided by GSA.

B. Maintenance and Related Services

1. Maintenance, Repair and Alteration of Buildings and Grounds

This category includes general building maintenance, painting of structures, general ground maintenance, and maintenance of utility systems. This activity also provides for minor alterations of facilities.

2. Custodial Services

This category includes janitorial, laundry, guard and security, fire protection, and refuse handling services.

3. Maintenance of Equipment

Maintenance of equipment consists of work necessary to keep mechanical, electrical, general purpose, and shop equipment operations.

C. Operation of Facilities

1. Utilities

This category reflects the cost of electricity, water, gas and other utilities for all areas, both institutional and operational.

2. Supplies and Equipment

This category includes the supplies, materials, and equipment required for the maintenance and operation of facilities at each installation.

TECHNICAL SERVICES

A. Automatic Data Processing

1. This category provides for the lease, purchase, and maintenance of general purpose data processing equipment which supports institutional operations at each installation. Excluded is equipment dedicated to specific research or operationsl systems which is funded from the Research and Development appropriation.

2. Programming and Operation Services

Programming and operation services include system analysis, programming, computer operation and related services. Business-type applications include payroll, personnel data, logistics, and procurement records and reports.

B. Scientific and Technical Information and Educational Programs

These programs include the costs of the technical libraries, educational/ informational programs, and the scientific and technical information services.

1. Operation of Technical Libraries

The technical library was established to service employees with their information needs for books, periodicals, technical reports, and other documentation. The costs for these services are budgeted in this subfunction.

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2. Educational/Informational Programs

The educational/informational programs provide for the documentation and dissemination of information about the agency's programs to the general public, the educational community at the elementary and secondary levels, and the mass communications media. Assistance to the mass communications media includes the assembly and exposition of newsworthy material in support of requests, and takes such form as press kits, news releases, television and radio information tapes and clips, and feature material.

3. Scientific and Technical Information

Scientific and technical information activities include documentation, publication, photographic and translation services.

C. Engineering Services

The engineering services provide for reliability and quality assurance studies, engineering design services for the design of minor construction, repair and alteration projects; special tooling equipment and machine parts; and other related engineering services.

ADMINISTRATIVE SUPPORT

A. Communications

Included in this category are costs of leased lines, long distance tolls, teletype services, local telephone service and other communications.

B. Administrative Printing

Included in this category are costs for duplicating, blueprinting, microfilming, and other photographic reproductions. Also included in this category is contractual printing and the related composition and binding operations, whether performed by other agencies (chiefly the Government Printing Office), or by commerical printing firms.

C. Supplies, Materials and Equipment

This category includes administrative supplies, materials, and equipment.

D. Transportation

Transportation services include rental of vehicles utilized for transportation of cargo. The cost of aircraft operations and services, as well as the movement of all supplies, materials, equipment, and related items by common carrier is also included.

E. Administrative Support Services

Administrative support services include those activities which support each installation such as: mail and distribution services; maintenance and repair of office equipment and vehicles; occupational medicine and environmental health; patent services; operation of photocopy equipment; claims of property damage; chart and related art work. Various improvement and feasibility studies and related services are also included in this category.

DISTRIBUTION OF PERMANENT POSITIONS BY INSTALLATION

Installation	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
Johnson Space Center.....	3,652	3,652	3,613	3,613	3,613
Kennedy Space Center.....	2,309	2,309	2,259	2,259	2,259
Marshall Space Flight Center.....	4,500	4,145	4,113	4,113	4,113
National Space Technology Laboratories.....	65	65	70	70	70
Goddard Space Flight Center.....	3,808	3,808	3,754	3,754	3,754
Wallops Flight Center....	420	420	415	415	415
Ames Research Center.....	1,701	1,700	1,676	1,676	1,676
Flight Research Center...	484	483	489	489	489
Langley Research Center..	3,375	3,371	3,332	3,332	3,332
Lewis Research Center....	3,115	3,072	3,025	3,025	3,025
Headquarters.....	1,591	1,591	1,570	1,570	1,570
Total, Permanent Positions.....	25,020	24,616	24,316	24,316	24,316

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1976 ESTIMATES

RESEARCH AND PROGRAM MANAGEMENT

SUMMARY OF OBLIGATIONS BY INSTALLATION
(Thousands of Dollars)

Installation	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
Johnson Space Center.....	117,936	118,179	121,612	125,196	34,966
Kennedy Space Center.....	93,555	96,739	95,896	94,974	29,753
Marshall Space Flight Center.....	136,644	129,718	131,316	130,506	34,372
National Space Technology Laboratories.....	1,556	1,497	1,673	1,696	423
Goddard Space Flight Center.....	97,481	100,579	104,833	105,847	27,740
Wallops Flight Center....	11,488	11,704	12,100	12,705	3,543
Ames Research Center.....	46,424	47,956	48,335	49,257	12,749
Flight Research Center...	12,239	12,492	13,173	13,714	4,907
Langley Research Center..	83,759	84,989	88,104	90,710	23,387
Lewis Research Center....	79,858	78,438	79,921	81,902	21,936
Headquarters.....	63,028	67,333	68,212	69,493	20,024
Total.....	743,968	749,624	765,175	776,000	213,800

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1976 ESTIMATES

RESEARCH AND PROGRAM MANAGEMENT

DISTRIBUTION OF PERMANENT POSITIONS BY PROGRAM

Program Office and Program	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
MANNED SPACE FLIGHT.....	7,391	7,275	7,123	7,117	7,117
Space shuttle.....	3,739	3,974	4,097	5,172	5,172
Space flight operations....	3,598	3,234	2,969	1,878	1,878
Advanced missions.....	49	56	55	67	67
Apollo.....	5	11	2	---	---
SPACE SCIENCE.....	3,016	3,196	3,034	2,915	2,915
Physics and astronomy.....	1,733	1,823	1,743	1,648	1,648
Lunar and planetary.....	659	709	635	558	558
Launch vehicle procurement.	624	664	656	709	709
SPACE APPLICATIONS.....	1,694	1,673	1,682	1,694	1,694
AERONAUTICS AND SPACE TECHNOLOGY.....	5,463	5,602	5,302	5,411	5,411
Aeronautical research and technology.....	3,861	3,899	3,786	3,849	3,849
Space and nuclear research and technology.....	1,602	1,703	1,516	1,562	1,562
ENERGY TECHNOLOGY APPLICATION	140	---*	254	241	241
TRACKING AND DATA ACQUISITION.....	857	821	858	878	878
TECHNOLOGY UTILIZATION.....	77	78	72	69	69
Subtotal, Direct Positions.....	18,638	18,645	18,325	18,325	18,325
Indirect Positions.....	6,382	5,971	5,991	5,991	5,991
TOTAL, PERMANENT POSITIONS...	25,020	24,616	24,316	24,316	24,316

*FY 1975 Budget Estimate included energy application positions in space and nuclear research and technology and Space Applications.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1976 ESTIMATES
RESEARCH AND PROGRAM MANAGEMENT
DISTRIBUTION OF OBLIGATIONS BY FUNCTION BY INSTALLATION
(Thousands of Dollars)

FUNCTION	Total NASA	Johnson Space Center	Kennedy Space Center	Marshall Space Flight Center	National Space Technology Laboratories	Goddard Space Flight Center	Wallops Flight Center	Ames Research Center	Flight Research Center	Langley Research Center	Lewis Research Center	Headquarters
Personnel and Related Costs												
1974.....	573,182	87,796	51,749	111,632	1,532	81,990	7,784	37,632	10,061	69,967	69,584	43,455
1975 Budget...	579,065	88,992	54,291	106,029	1,474	84,178	8,037	39,497	10,454	72,601	69,598	43,914
1975 Current..	591,915	93,138	53,717	107,439	1,650	87,099	8,278	39,742	11,107	74,698	70,039	45,008
1976.....	597,513	94,231	54,242	105,900	1,672	87,630	8,527	40,315	11,346	76,036	71,833	45,781
Transition....	156,759	24,268	14,587	27,150	418	22,861	2,197	10,363	3,003	19,494	18,735	13,683
Travel												
1974.....	15,507	2,925	1,625	1,916	24	2,249	234	889	246	1,903	1,063	2,433
1975 Budget...	16,444	3,498	1,456	2,233	23	2,245	265	899	235	1,910	1,065	2,615
1975 Current..	15,622	3,232	1,582	1,962	23	2,274	237	815	224	1,980	994	2,299
1976.....	17,001	3,666	1,764	2,115	24	2,255	251	878	242	2,267	1,074	2,465
Transition....	5,065	1,015	664	556	5	631	123	289	84	681	316	701
Facilities Services												
1974.....	74,822	11,192	25,179	9,215	---	5,839	2,651	4,625	1,391	6,345	7,938	447
1975 Budget...	79,349	11,423	25,972	8,974	---	7,421	2,413	5,247	1,364	5,895	6,400	4,240
1975 Current..	83,087	12,290	25,452	9,415	---	8,460	2,654	5,345	1,426	6,421	7,587	4,037
1976.....	85,590	13,110	24,488	9,601	---	9,194	2,920	5,618	1,609	7,172	7,773	4,105
Transition....	28,850	4,964	8,961	3,143	---	2,474	877	1,403	1,500	1,890	2,538	1,100
Technical Services												
1974.....	36,712	7,199	6,462	6,722	---	2,445	193	671	81	1,549	356	11,034
1975 Budget...	34,261	6,048	6,167	6,884	---	1,882	227	675	91	1,208	432	10,647
1975 Current..	32,846	5,986	5,487	6,701	---	1,791	248	626	79	1,171	486	10,271
1976.....	33,871	6,707	5,180	6,919	---	1,914	274	632	76	1,202	406	10,561
Transition....	10,230	2,156	2,190	1,870	---	508	17	127	52	380	144	2,786
Administrative Support												
1974.....	43,745	8,824	8,540	7,159	---	4,958	626	2,607	460	3,995	917	5,659
1975 Budget...	40,505	8,218	8,853	5,598	---	4,853	762	1,638	348	3,375	943	5,917
1975 Current..	41,705	6,966	9,658	5,799	---	5,209	683	1,807	337	3,834	815	6,597
1976.....	42,025	7,482	9,300	5,971	---	4,854	733	1,814	441	4,033	816	6,581
Transition....	12,896	2,563	3,351	1,653	---	1,266	329	567	268	942	203	1,754
Total												
1974.....	743,968	117,936	93,555	136,644	1,556	97,481	11,488	46,424	12,239	83,759	79,858	63,028
1975 Budget...	749,624	118,179	96,739	129,718	1,497	100,579	11,704	47,956	12,492	84,989	78,438	67,333
1975 Current..	765,175	121,612	95,896	131,316	1,673	104,833	12,100	48,335	13,173	88,104	79,921	68,212
1976.....	776,000	125,196	94,974	130,506	1,696	105,847	12,705	49,257	13,714	90,710	81,902	69,493
Transition....	213,800	34,966	29,753	34,372	423	27,740	3,543	12,749	4,907	23,387	21,936	20,024

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

PROPOSED APPROPRIATION LANGUAGE

RESEARCH AND PROGRAM MANAGEMENT

RESEARCH AND PROGRAM MANAGEMENT

For necessary expenses of research in Government laboratories, management of programs and other activities of the National Aeronautics and Space Administration, not otherwise provided for, including uniforms or allowances therefor, as authorized by law (5 U.S.C. 5901–5902); awards; hire, maintenance and operation of administrative aircraft; purchase (not to exceed [sixteen] *ten* for replacement only) and hire of passenger motor vehicles; and maintenance and repair of real and personal property, and not in excess of [$10,000] *$25,000* per project for construction of new facilities and additions to existing facilities, and not in excess of [$25,000] *$50,000* per project for rehabilitation and modification of facilities; [$740,000,000] *$776,000,000*: *Provided*, That contracts may be entered into under this appropriation for maintenance and operation of facilities, and for other services, to be provided during the next fiscal year: *Provided further*, That not to exceed $35,000 of the foregoing amount shall be available for scientific consultations or extraordinary expense, to be expended upon the approval or authority of the Administrator and his determination shall be final and conclusive.

For "Research and program management," for the period July 1, 1976, through September 30, 1976, $213,800,000. (42 U.S.C. 2451, et seq.; Department of Housing and Urban Development; Space, Science, Veterans, and Certain Other Independent Agencies Appropriation Act, 1975; additional authorizing legislation to be proposed for fiscal year 1976, and for the period July 1, 1976, through September 30, 1976.)

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Research and Program Management

Program and Financing (in thousands of dollars)

Identification code 27-00-0103-0-1-999	Budget plan			Costs and obligations		
	1974 actual	1975 estimate	1976 estimate	1974 actual	1975 estimate	1976 estimate
Program by activities:						
Direct program:						
1. Manned space flight	320,854	318,300	319,700	321,313	318,300	319,700
2. Scientific investigations in space	118,950	126,300	124,200	118,487	126,300	124,200
3. Space applications	68,728	75,800	79,200	68,539	75,800	79,200
4. Space research and technology	57,451	60,400	63,600	57,266	60,400	63,600
5. Aeronautical research and technology	132,871	132,400	134,200	132,718	132,400	134,200
6. Energy programs	4,380	9,175	10,900	4,394	9,175	10,900
7. Supporting activities	40,734	42,800	44,200	40,366	42,800	44,200
Total direct program costs, funded	743,968	765,175	776,000	743,083	765,175	776,000
Reimbursable program:						
1. Manned space flight	1,153	1,552	1,424	1,165	1,552	1,424
2. Scientific investigations in space	165	200	292	170	200	292
3. Space applications	3,429	4,948	4,772	3,495	4,948	4,772
4. Space research and technology	856	2,019	2,232	862	2,019	2,232
5. Aeronautical research and technology	16	81	10	17	81	10
7. Supporting activities	112	200	170	116	200	170
Total reimbursable program costs	5,731	9,000	8,900	5,825	9,000	8,900
Total program costs, funded	749,699	774,175	784,900	748,908	774,175	784,900
Change in selected resources (undelivered orders)	----------	----------	----------	791	----------	----------
10 Total	749,699	774,175	784,900	749,699	774,175	784,900
Financing:						
Receipts and reimbursements from:						
11 Federal funds				−4,226	−6,191	−6,357
14 Non-Federal sources				−1,505	−2,809	−2,543
25 Unobligated balance lapsing				632	----------	----------
Budget authority				744,600	765,175	776,000
Budget authority:						
40 Appropriation				744,600	740,000	776,000
42 Transferred from other accounts				----------	5,200	----------
43 **Appropriation (adjusted)**				744,600	745,200	776,000
44.20 **Proposed supplemental for civilian pay raises**				----------	19,975	----------
Relation of obligations to outlays:						
71 Obligations incurred, net				743,968	765,175	776,000
72 Obligated balance, start of year				62,696	52,756	53,631
74 Obligated balance, end of year				−52,756	−53,631	−53,631
77 Adjustments in expired accounts				5,629	----------	----------
90 Outlays, excluding pay raise supplemental				759,537	745,000	775,325
91.20 Outlays from civilian pay raise supplemental				----------	19,300	675

RESEARCH AND PROGRAM MANAGEMENT

FISCAL YEAR 1976 ESTIMATES

LYNDON B. JOHNSON SPACE CENTER

DESCRIPTION

The Lyndon B. Johnson Space Center is located approximately 20 miles southeast of downtown Houston, Texas. Total NASA-owned land at the Houston site consists of 1,620 acres. The Center also occupies an additional 54,080 acres at the White Sands Test Facility, Las Cruces, New Mexico. The Center's mission also requires occupancy of the Earth Resources Laboratory located at the National Space Technology Laboratories, Bay St. Louis, Mississippi. The total capital investment of the Lyndon B. Johnson Space Center, including fixed assets in progress and contractor-held facilities at various locations and the White Sands Test Facility, as of June 30, 1974, was $914,010,000.

MISSION

The Lyndon B. Johnson Space Center (JSC) was established in November 1961 (initially as the Manned Spacecraft Center). Current responsibilities include manned spacecraft development, program management, flight crew selection and training, space flight operations and related medical research, life sciences, and space science and applications. The Center has major management responsibilities for the Apollo Soyuz Test Project, the Space Shuttle program, and the Earth Resources Program.

The lunar landing missions were completed in December 1972; however, JSC continued its responsibilities and functions in modifying the Apollo spacecraft to support the requirements of both the Skylab program and the Apollo Soyuz Test Project (ASTP).

The U.S.A. and the U.S.S.R. are jointly participating in the ASTP, with launch scheduled early in FY 1976. JSC has prime responsibility for the Apollo spacecraft, the docking module and docking system hardware, and development and coordination of arrangements and interfaces for this mission.

JSC, under NASA Headquarters program direction, is Lead Center for the overall planning, direction and integration of all aspects of the Space Shuttle Program. In this role, the Center manages the design, development, test, and production of the Orbiter system, as well as supporting the Space Shuttle Program Manager in the integration of all elements of the program. The Shuttle is a low cost, space transportation system that includes an Orbiter vehicle that can fly repeatedly from earth to orbit and back, thus replacing many expendable launch systems currently in use. The Shuttle program includes, in addition to Orbiters, external tanks, solid rocket

boosters, main engines, ground and flight planning and operations, and launch and landing facilities planning and implementation.

As Lead Center for the Agency's Earth Resources Program (ERP), which is a significant part of the experimental Federal Earth Resources Program, JSC coordinates the work of other NASA Centers in this enterprise. JSC also has a Project Center role in the ERP, under which it provides the focus for all Center activity related to the development and application of remote sensing devices and techniques for earth resources surveys. One of these ERP activities includes an airborne research program for development of remote sensors and data management techniques.

JSC engineering and development efforts focus on systems definition, development, evaluation and test for spacecraft development programs, as well as on applied research and technology development and advanced studies for future spacecraft systems, payloads and programs. Space science and applications efforts are devoted to the development of flight experiments, evaluation of results from scientific exploration, continuing research on return lunar materials, and space environment studies. Life Sciences capabilities include in-flight experiments, flight crew monitoring, and development of physiological requirements for manned spacecraft systems. In the area of flight operations, JSC has extensive experience and capability for mission planning, and for the overall direction of flight control activities. Flight control is executed from the Mission Control Center, utilizing the Manned Space Flight Network.

The application of NASA-developed space technology to public problems includes cooperative efforts with other Federal agencies and with several state and local governments. The Urban Systems Project Office manages, in close association with HUD, the engineering and development of an integrated utilities systems that utilizes aerospace techniques toward the achievement of more efficient public housing.

JSC's White Sands Test Facility conducts the development and testing of spacecraft engines, and performs other functions that support the overall JSC mission but are best carried out in an isolated area.

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SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
I. Personnel and Related Costs..	$87,796	$88,992	$93,138	$94,231	$24,268
II. Travel.....	2,925	3,498	3,232	3,666	1,015
III. Facilities Services.....	11,192	11,423	12,290	13,110	4,964
IV. Technical Services.....	7,199	6,048	5,986	6,707	2,156
V. Administrative Support.....	8,824	8,218	6,966	7,482	2,563
VI. Total, fund requirements....	$117,936	$118,179	$121,612	$125,196	$34,966

Over two-thirds of Johnson's permanent positions are used in direct support of the various R&D programs. The following table summarizes the actual and planned utilization of positions for direct program activity and for indirect support.

Distribution of Permanent Positions by Program

Direct Positions

Manned Space Flight

Space shuttle....	1,644	1,693	1,870	2,248	2,248
Space flight operations.....	974	909	745	358	358
Advanced missions.....	17	17	20	31	31
Apollo.....	3	6	2	---	---

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
Space Science					
Physics and astronomy.....	28	14	29	34	34
Lunar and planetary exploration...	50	70	56	54	54
Applications					
Space applications..	319	365	297	297	297
Aeronautics and Space Technology					
Aeronautical research and technology....	7	4	7	5	5
Space and nuclear research and technology....	4	4	3	3	3
Energy					
Energy technology applications..	32	--	33	33	33
Technology Utilization.....	14	8	6	5	5
Subtotal, direct positions...	3,092	3,090	3,068	3,068	3,068
Indirect Positions					
Director and staff.....	111	114	115	115	115
Administrative support.....	166	396	164	164	164
Research and technology support.....	283	52	266	266	266

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Dollars in Thousands)			
Subtotal, indirect positions.....	560	562	545	545	545
Total, permanent positions.	3,652	3,652	3,613	3,613	3,613

PERSONNEL AND RELATED COSTS

I. PERSONNEL AND RELATED COSTS.....	$87,796	$88,992	$93,138	$94,231	$24,268
Basis of Fund Requirements					
A. Compensation and Benefits:					
1. Compensation					
a. Permanent positions.....	$77,130	$78,229	$81,952	$83,032	$21,180
b. Nonpermanent positions.....	1,106	1,259	1,318	1,194	365
c. Reimbursable...	1,043	1,173	1,000	922	232
d. Overtime and other compensation.....	1,157	1,078	1,069	1,081	270
Subtotal, Compensation...	$80,436	$81,739	$85,339	$86,229	$22,047
2. Benefits.....	$6,814	$6,823	$7,336	$7,542	$2,051
Subtotal, Compensation and Benefits.....	$87,250	$88,562	$92,675	$93,771	$24,098
B. Supporting Costs:					
1. Transfer of personnel.....	$128	$100	$133	$110	$20
2. Personnel training.....	388	330	330	350	150

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
3. Civil Service Commission services.....	$30	---	---	---	---
Subtotal, Supporting Costs.....	$546	$430	$463	$460	$170
Total, Personnel and Related Costs.....	$87,796	$88,992	$93,138	$94,231	$24,268
1. Compensation.....	$80,436	$81,739	$85,339	$86,229	$22,047
a. Permanent positions.....	$77,130	$78,229	$81,952	$83,032	$21,180

The current estimate for 1975 is increased from the 1975 budget estimate to reflect the October 1974 pay raise. This is partially offset by the savings resulting from the reduction in manpower from 3,652 to 3,613.

The increase in 1976 is primarily the full year net cost of these actions.

Basis of Cost for Permanent Positions

In 1976, the cost of permanent positions will be $83,032. This is an increase of $1,080 from 1975. This increase results from the following:

Cost of permanent positions in 1975.....		$81,952
Cost increases:		+3,021
Within grade advances and career development		
Full year effect of 1975 actions.....	+$693	
Partial year effect of 1976 actions.....	+746	
Full year effect of October 1974 pay raise...	+1,263	
Additional extra day.....	+319	
Cost decreases:		-1,941
Full year effect of 1975 manpower reductions	-$836	
Turnover savings		
Full year effect of 1975 actions.....	-427	
Partial year effect of 1976 actions.....	-678	
Cost of permanent positions in 1976.....		$83,032

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Dollars in Thousands)			
b. Nonpermanent positions:					
1. Cost.....	$1,106	$1,259	$1,318	$1,194	$365
2. Number of manyears.....	168	201	198	175	54

The 1976 program includes 175 manyears to support the following programs: :

Distribution of Nonpermanent Manyears by Program

	Positions
College cooperative training.....	65
Summer employment.....	11
Opportunity programs.....	77
Other temporary employment.....	19
Other.....	3
Total.....	175

The current estimate for 1975 is increased from the 1975 budget estimate due to the October 1974 pay raise. The decrease in the 1976 estimate is due to a sizeable reduction in the temporary clerical employment consistent with the completion of the Skylab Program. This reduction is partially offset to provide more emphasis on the minority and female opportunity program.

c. Reimbursable details.....	$1,043	$1,173	$1,000	$922	$232

The military personnel detailed to the Johnson Space Center on a reimbursable basis are personnel experienced in manned flight or related fields. Each individual performs an essential function in carrying out agency programs.

From the inception of the Johnson Space Center, it was recognized that the experience and knowledge of individuals with a "flight" background would be essential to the manned space flight programs. One civilian employee is also detailed, on a reimbursable basis, to the Johnson Space Center. This is an individual whose experience in the field of medicine is essential. The lower current estimate for 1975 reflects a reduction of 14 manyears as detailees in completed work are not replaced as originally planned. The 1976 decrease is related to a further reduction of six military detailees.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
d. Overtime and other compensation.....	$1,157	$1,078	$1,069	$1,081	$270

The major portion (approximately 83%) of overtime and holiday pay is used for long duration chamber tests, preparation and operation of astronauts for training simulators and those maintenance and repair operations that must be accomplished on non-scheduled work days. The remaining portion (approximately 17%) of overtime and holiday pay is used for peak work load periods, i.e., Source Evaluation Boards, fiscal year-end closing, etc. The decrease from the 1975 budget estimate is the net result of efforts to curtail overtime and additional costs of the October 1974 pay raise. The 1976 estimate reflects the full year cost of the pay raise.

2. Benefits:	$6,814	$6,823	$7,336	$7,542	$2,051

The current estimate for 1975 is increased from the 1975 budget estimate to account for a higher base for retirement; an increase of 20% in the Government's share of the contribution for health insurance. The increases were partially offset by a reduction in the number of awards and elimination of the previously planned RIF. The increase in 1976 is attributable to the full year costs of these actions.

The distribution of these costs by major categories is as follows:

Category of Costs					
Contribution to the Civil Service Retirement Fund.....	$5,418	$5,485	$5,792	$5,877	$1,666
Contribution for employees life insurance.....	266	290	257	260	66
Contribution for employees health insurance.....	914	780	1,183	1,300	304

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
Cateogry of Cost (Cont'd)					
Contribution to FICA.....	44	46	49	50	10
Incentive awards.....	54	90	55	55	5
Other personnel benefits.....	1	1	---	---	---
Severence pay.....	117	131			
Total.....	$6,814	$6,823	$7,336	$7,542	$2,051
B. Supporting Costs.....	$546	$430	$463	$460	$170
1. Transfer of personnel.....	$128	$100	$133	$110	$20
2. Personnel training.....	388	330	330	350	150
3. Civil Service Commission.....	30	---	---	---	---
1. Transfer of personnel.....	$128	$100	$133	$110	$20

The current estimate for 1975 is increased over the budget estimate to pay for additional moves. This was necessitated by the movement of Reliability and Quality Assurance personnel to the contractor plant at Downey, California. The decrease in 1976 is based on fewer anticipated moves.

2. Personnel training.....	$388	$330	$330	$350	$150

The personnel training costs for 1976 are based on continuation of current training programs and the need to reorient skills of employees into areas compatible with the direction of the space program in the 1970's and JSC's role in the program. A prime objective is career development to permit employees to advance to more responsible positions and to provide the center with highly motivated and experienced personnel not readily available in the labor market. The increase (6%) is attributable to an increase in tuition fees, text books, and training courses costs.

TRAVEL

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
II. TRAVEL.....	$2,925	$3,498	$3,232	$3,666	$1,015

Over 82% of the total JSC travel estimate is Program Related travel. Because of the complexity of the Research and Development programs and the distribution of contractor effort throughout the entire United States, coordination and management of activities and contract monitoring require frequent examination by personnel responsible for the program. The Apollo Soyuz Test Project will peak during 1975. In 1976, the Shuttle Program will be nearing a maximum level of activity.

Basis of Fund Requirements

Summary of Travel by Major Category

A. Program related travel.....	$2,231	$2,426	$2,653	$3,057	$837
B. Meetings and technical seminars.....	287	337	165	179	49
C. Administrative travel.....	407	735	414	430	129
Total, Travel.....	$2,925	$3,498	$3,232	$3,666	$1,015
A. Program related travel.....	$2,231	$2,426	$2,653	$3,057	$837

The current estimate for 1975 is increased over the 1975 budget estimate to reflect essential program travel predominantly associated with the Shuttle and ASTP programs. Offsetting adjustments have been made in the Meeting and Administrative travel categories. The higher 1976 requirement increases because the Space Shuttle program will have reached the critical Design and Development Phase, necessitating hardware reviews and close configuration and contract monitoring. Higher air tariffs are also reflected here.

B. Meetings and technical seminars.....	$287	$337	$165	$179	$49
C. Administrative travel.....	$407	$735	$414	$430	$129

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The current estimate for 1975 is reduced from the 1975 budget estimate to reflect the recent legislation limiting Federal travel expenses and the curtailment of Meeting and Administrative travel to insure that essential Program Related travel requirements are met. Travel requirements for 1976 are estimated at the 1975 level and adjusted to take into account increased air tariffs.

FACILITIES SERVICES

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
III. FACILITIES SERVICES....	$11,192	$11,423	$12,290	$13,110	$4,964
Basis of Fund Requirements					
Summary of Facilities Services					
A. Maintenance and Related Services					
1. Maintenance, repair and alteration of buildings and grounds.....	$5,390	$3,648	$5,199	$5,340	$1,675
2. Custodial services.....	2,500	2,983	2,965	3,216	1,789
3. Maintenance of equipment.....	204	282	347	403	150
Subtotal.....	$8,094	$6,913	$8,511	$8,959	$3,614
B. Operation of Facilities					
1. Utilities.....	$2,048	$2,771	$2,757	$3,151	$1,070
2. Supplies and equipment.....	1,050	1,739	1,022	1,000	280
Subtotal.....	$3,098	$4,510	$3,779	$4,151	$1,350
Total, Facilities Services..	$11,192	$11,423	$12,290	$13,110	$4,964
A. Maintenance and Related Services	$8,094	$6,913	$8,511	$8,959	$3,614
1. Maintenance, repair and alteration of buildings and grounds.....	$5,390	$3,648	$5,199	$5,340	$1,675

The current estimate for 1975 is increased over the 1975 budget estimate due to increased support contractor wage rates, and a recategorization of supplies and equipment costs to this subfunction. The 1975 budget estimate was based on a plan to issue Government supplies and equipment to the maintenance contractor. However, this was not feasible because the contract was subsequently divided among four companies. Procurement cycle demands and requirements for many nonstandardized items made the plan impractical, with the result that supplies and equipment are now purchased by the individual contractors. An offsetting reduction has been made in the supplies and equipment category below. The increase for 1976 is based on the full year effect of increased support contract wage rates and Shuttle Program buildup at the White Sands Test Facility. The significantly heavier use of WSTF facilities as the Shuttle buildup proceeds will produce higher maintenance and operating costs.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
2. Custodial services.....	$2,500	$2,983	$2,965	$3,216	$1,789

This category includes security, fire protection, ambulance, and janitorial services. The current estimate for 1975 remains essentially the same as the 1975 budget estimate. The increase in 1976 provides for the full year effect of increased support contractor wage rates.

3. Maintenance of equipment.....	$204	$282	$347	$403	$150

The current estimate for 1975 is increased over the 1975 budget estimate due to purchase of leased office equipment late in 1974. Previous lease arrangements included maintenance and repair which are now purchased. The increase in 1976 is also attributable to the purchase of leased equipment with delivery in 1975 and the need to provide maintenance and repair.

B. Operation of Facilities.....	$3,098	$4,510	$3,779	$4,151	$1,350
1. Utilities.....	$2,048	$2,771	$2,757	$3,151	$1,070

The current estimate for 1975 is decreased from the budget estimate as a result of implementation of energy conservation measures at JSC that have reduced costs. In 1976 these energy conservation measures will be continued but will be offset by higher rate charges taking place in 1975.

2. Supplies and equipment.....	$1,050	$1,739	$1,022	$1,000	$280

The current estimate for 1975 was decreased from the 1975 budget estimate to reflect the recategorization of costs for supplies and materials to the maintenance, repair and alteration of buildings and grounds category above. The slight decrease in 1976 is attributable to the Center's policy to reduce supply expenditures.

TECHNICAL SERVICES

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
IV. TECHNICAL SERVICES.....	$7,199	$6,048	$5,986	$6,707	$2,156

Basis of Fund Requirements

Summary of Technical Services

A. Automatic Data Processing					
1. Equipment.....	$3,109	$2,613	$1,975	$2,026	$550
2. Programming and operation services.....	1,994	1,756	1,956	2,239	605
Subtotal.....	$5,103	$4,369	$3,931	$4,265	$1,155
B. Engineering Services....	$325	$189	$407	$447	$120
C. Scientific and Technical Information and Educational Programs					
1. Technical library...	$80	$80	$80	$82	$25
2. Educational/informational programs.	446	399	427	499	140
3. Scientific and technical information.....	1,245	1,011	1,141	1,414	716
Subtotal.....	$1,771	$1,490	$1,648	$1,995	$881
Total, Technical Services...	$7,199	$6,048	$5,986	$6,707	$2,156

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
A. Automatic Data Processing.....	$5,103	$4,369	$3,931	$4,265	$1,155

The current estimate for 1975 was decreased from the 1975 budget estimate to reflect the purchase of leased equipment late in 1974 which reduced equipment costs. The decrease was partially offset by an increase in programming and operations effort required to update financial and management accounting systems and higher support contractor rates. The increase in the 1976 estimate is the full year effect of higher wage rates.

B. Engineering Services....	$325	$189	$407	$447	$120

The current estimate for 1975 is increased over the 1975 budget estimate due to the addition of costs in this category that were previously reported in the Administrative Support function as well as for wage increases. A corresponding reduction is reflected in the Administrative Support function. The increase in the 1976 estimate is the full year effect of higher contractor wage rates.

C. Scientific and Technical Information and Educational Programs.....	$1,771	$1,490	$1,648	$1,995	$881
1. Technical library...	$80	$80	$80	$82	$25

The technical library acquires approximately 14,000 units a year. The 1976 estimate reflects wage escalation.

2. Educational/informational programs.	$446	$399	$427	$499	$140

The current estimate for 1975 is increased over the 1975 budget estimate for support contract wage increases. The increase in the 1976 estimate is the full year effect of higher wage rates for existing contracts.

3. Scientific and technical information.....	$1,245	$1,011	$1,141	$1,414	$716

The current estimate for 1975 is increased over the 1975 budget estimate for support contractor wage increases. The increase in the 1976 estimate is the full year effect of higher wage rates on existing contracts.

ADMINISTRATIVE SUPPORT

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
V. ADMINISTRATIVE SUPPORT	$8,824	$8,218	$6,966	$7,482	$2,563

Basis of Fund Requirements

Summary of Administrative Support

A. Communications					
1. Leased lines and long distance tolls	$894	$896	$914	$865	$234
2. Local telephone services	995	1,008	1,069	1,075	290
3. Other communications	105	129	128	117	32
Subtotal	$1,994	$2,033	$2,111	$2,057	$556
B. Administrative Printing	$625	$820	$591	$525	$142
C. Supplies, Materials and Equipment	$2,788	$1,654	$1,237	$1,134	$306
D. Transportation					
1. Center operations	$473	$530	$475	$543	$150
E. Administrative Support Services					
1. Installation support	$1,888	$2,213	$1,725	$2,108	$1,104
2. Occupational medicine and environmental health	1,056	968	827	1,115	305
Subtotal	$2,944	$3,181	$2,552	$3,223	$1,409
Total, Administrative Support	$8,824	$8,218	$6,966	$7,482	$2,563

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
A. Communications.....	$1,944	$2,033	$2,111	$2,057	$556

The current estimate for 1975 is increased over the 1975 budget estimate to account for rate increases in maintenance, repair, installation, and relocation of telephone instruements. The decrease in 1976 reflects the planned reduction of FTS costs.

B. Administrative Printing.....	$625	$820	$591	$525	$142

The current estimate is reduced from the 1975 budget estimate as a result of Post-Skylab and ASTP printing requirements being substantially lower than planned. The previous estimate was based on Post-Apollo printing experience. The decrease in 1976 is related to reduction in ASTP requirements.

C. Supplies, Materials and Equipment.....	$2,788	$1,654	$1,237	$1,134	$306

The current estimate for 1975 is reduced from the 1975 budget estimate due to lower lease costs resulting from the purchase of leased equipment late in 1974, as well as JSC's policy to reduce supply expenditures. The decrease in 1976 reflects the full year savings of these actions.

D. Transportation.....	$473	$530	$475	$543	$150

The current estimate for 1975 is reduced from the 1975 budget estimate as a result of an energy conservation program at JSC. The 1976 increase reflects requirements for scheduled overhaul of engines on the administrative aircraft and escalation of GSA rental rates.

E. Administrative Support Services.....	$2,944	$3,181	$2,552	$3,223	$1,409

The current estimate for 1975 is reduced from the 1975 budget estimate as a result of a reclassification of costs to the technical service function, as well as the consolidation of two medical support service contracts which further reduced costs. The 1976 increase reflects the full year effect of higher wage rates for existing contracts.

APOLLO SPACECRAFT PROGRAM OFFICE

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	3	3
GS-14	6	6
ALL OTHER GS	8	8
TOTAL PERMANENT	18	18

EARTH RESOURCES PROGRAM OFFICE

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	7	7
GS-14	7	7
ALL OTHER GS	18	18
TOTAL PERMANENT	33	33

PROGRAM OPERATIONS OFFICE

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	17	17
GS-14	36	36
ALL OTHER GS	69	69
TOTAL PERMANENT	122	122

DIRECTOR OF ADMINISTRATION AND PROGRAM SUPPORT

	75	76
EXCEPTED	2	2
GS-16	0	0
GS-15	25	25
GS-14	38	38
ALL OTHER GS	328	328
TOTAL PERMANENT	393	393

DIRECTOR OF CENTER OPERATIONS

	75	76
EXCEPTED	2	2
GS-16	0	0
GS-15	12	12
GS-14	13	13
ALL OTHER GS	386	386
WAGE GRADE	26	26
TOTAL PERMANENT	439	439

DIRECTOR OF ENGINEERING AND DEVELOPMENT

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	4	4
GS-14	13	13
ALL OTHER GS	14	14
TOTAL PERMANENT	32	32

ASSISTANT DIRECTOR FOR CHEMICAL AND MECH SYSTEMS

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	2	2
GS-14	0	0
ALL OTHER GS	2	2
TOTAL PERMANENT	5	5

CREW SYSTEMS DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	6	6
GS-14	15	15
ALL OTHER GS	85	85
TOTAL PERMANENT	106	106

PROPULSION AND POWER DIVISION

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	3	3
GS-14	16	16
ALL OTHER GS	80	80
TOTAL PERMANENT	100	100

STRUCTURES AND MECHANICS DIVISION

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	10	10
GS-14	21	21
ALL OTHER GS	87	87
TOTAL PERMANENT	119	119

SPACE ENVIRONMENT TEST DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	4	4
GS-14	6	6
ALL OTHER GS	27	27
TOTAL PERMANENT	37	37

URBAN SYSTEMS PROJECT OFFICE

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	2	2
GS-14	3	3
ALL OTHER GS	23	23
TOTAL PERMANENT	28	28

ASSISTANT DIRECTOR FOR ADVANCED PLANNING AND DESIGN

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	0	0
GS-14	0	0
ALL OTHER GS	1	1
TOTAL PERMANENT	2	2

SPACECRAFT DESIGN DIVISION

	75	76
EXCEPTED	1	1
GS-16	1	1
GS-15	8	8
GS-14	12	12
ALL OTHER GS	65	65
TOTAL PERMANENT	87	87

ENGINEERING ANALYSIS DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	2	2
GS-14	7	7
ALL OTHER GS	40	40
TOTAL PERMANENT	49	49

FUTURE PROGRAMS DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	6	6
GS-14	2	2
ALL OTHER GS	4	4
TOTAL PERMANENT	12	12

ASSISTANT DIRECTOR FOR ELECTRONIC SYSTEMS

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	3	3
GS-14	0	0
ALL OTHER GS	2	2
TOTAL PERMANENT	6	6

AVIONICS SYSTEMS ENGINEERING DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	10	10
GS-14	19	19
ALL OTHER GS	72	72
TOTAL PERMANENT	101	101

TRACKING AND COMMUNICATIONS DEVELOPMENT DIVISION

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	6	6
GS-14	20	20
ALL OTHER GS	73	73
TOTAL PERMANENT	100	100

CONTROL SYSTEMS DEVELOPMENT DIVISION

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	7	7
GS-14	24	24
ALL OTHER GS	75	75
TOTAL PERMANENT	107	107

EXPERIMENT SYSTEMS DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	5	5
GS-14	18	18
ALL OTHER GS	59	59
TOTAL PERMANENT	82	82

DIRECTOR OF SCIENCE AND APPLICATIONS

	75	76
EXCEPTED	2	2
GS-16	0	0
GS-15	3	3
GS-14	3	3
ALL OTHER GS	12	12
TOTAL PERMANENT	20	20

EARTH OBSERVATIONS DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	6	6
GS-14	15	15
ALL OTHER GS	63	63
TOTAL PERMANENT	84	84

PLANETARY AND EARTH SCIENCES DIVISION

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	2	2
GS-14	4	4
ALL OTHER GS	43	43
TOTAL PERMANENT	50	50

OFFICE OF THE CURATOR

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	1	1
GS-14	1	1
ALL OTHER GS	9	9
TOTAL PERMANENT	11	11

SCIENCE AND APPLICATIONS ASTRONAUT OFFICE

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	3	3
GS-14	3	3
ALL OTHER GS	1	1
TOTAL PERMANENT	7	7

DIRECTOR OF LIFE SCIENCES

	75	76
EXCEPTED	2	2
GS-16	0	0
GS-15	1	1
GS-14	0	0
ALL OTHER GS	5	5
TOTAL PERMANENT	8	8

BIOENGINEERING SYSTEMS DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	7	7
GS-14	5	5
ALL OTHER GS	22	22
TOTAL PERMANENT	34	34

BIOMEDICAL RESEARCH DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	3	3
GS-14	8	8
ALL OTHER GS	17	17
TOTAL PERMANENT	28	28

HEALTH SERVICES DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	2	2
GS-14	3	3
ALL OTHER GS	14	14
TOTAL PERMANENT	19	19

LIFE SCIENCES ASTRONAUT OFFICE

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	0	0
GS-14	3	3
ALL OTHER GS	2	2
TOTAL PERMANENT	6	6

WHITE SANDS TEST FACILITY

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	2	2
GS-14	8	8
ALL OTHER GS	35	35
TOTAL PERMANENT	46	46

EARTH RESOURCES LABORATORY (ATMTF)

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	3	3
GS-14	1	1
ALL OTHER GS	21	21
TOTAL PERMANENT	25	25

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NATIONAL AERONAUTICS AND SPACE ADMINIST
LYNDON B JOHNSON SPACE CENTER
HOUSTON, TEXAS

STAFFING SUMMARY

	75	76
EXCEPTED	44	44
GS-16	6	6
GS-15	294	294
GS-14	487	487
ALL OTHER GS	2754	2754
WAGE GRADE	26	26
TOTAL PERMANENT	3613	3613

REGIONAL OFFICES

NASA AUDIT
NASA INSPECTOR

DIRECTOR
DEPUTY DIRECTOR

	75	76
EXCEPTED	4	4
GS-16	0	0
GS-15	1	1
GS-14	0	0
ALL OTHER GS	6	6
TOTAL PERMANENT	11	11

EQUAL OPPORTUNITY PROGRAMS OFFICE

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	0	0
GS-14	1	1
ALL OTHER GS	3	3
TOTAL PERMANENT	4	4

PERSONNEL OFFICE

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	1	1
GS-14	4	4
ALL OTHER GS	41	41
TOTAL PERMANENT	46	46

PATENT COUNSEL

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	2	2
GS-14	1	1
ALL OTHER GS	4	4
TOTAL PERMANENT	7	7

LEGAL OFFICE

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	2	2
GS-14	3	3
ALL OTHER GS	6	6
TOTAL PERMANENT	12	12

PUBLIC AFFAIRS

EXCEPTED
GS-16
GS-15
GS-14
ALL OTHER GS
TOTAL PERMANENT

SPACE SHU
PROGRAM

EXCEPTED
GS-16
GS-15
GS-14
ALL OTHER GS
TOTAL PERMANENT

APOLLO SPACECRAFT PROGRAM OFFICE

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	3	3
GS-14	6	6
ALL OTHER GS	8	8
TOTAL PERMANENT	18	18

EARTH RESOURCES PROGRAM OFFICE

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	7	7
GS-14	7	7
ALL OTHER GS	18	18
TOTAL PERMANENT	33	33

PROGRAM OPERATIONS OFFICE

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	17	17
GS-14	36	36
ALL OTHER GS	69	69
TOTAL PERMANENT	122	122

SPACE SHUTTL
PROJECT

EXCEPTED
GS-16
GS-15
GS-14
ALL OTHER GS
TOTAL PERMANENT

DIRECTOR OF ADMINISTRATION AND PROGRAM SUPPORT

	75	76
EXCEPTED	2	2
GS-16	0	0
GS-15	25	25
GS-14	38	38
ALL OTHER GS	328	328
TOTAL PERMANENT	393	393

DIRECTOR OF CENTER OPERATIONS

	75	76
EXCEPTED	2	2
GS-16	0	0
GS-15	12	12
GS-14	13	13
ALL OTHER GS	386	386
WAGE GRADE	26	26
TOTAL PERMANENT	439	439

DIRECTOR OF ENGINEERING AND DEVELOPMENT

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	4	4
GS-14	13	13
ALL OTHER GS	14	14
TOTAL PERMANENT	32	32

ASSISTANT DIRECTOR FOR CHEMICAL AND MECH SYSTEMS

	75	76
EXCEPTED	1	1

ASSISTANT DIRECTOR FOR ADVANCED PLANNING AND DESIGN

	75	76
EXCEPTED	1	1

ASSISTANT DIRECTOR FOR ELECTRONIC SYSTEMS

	75	76
EXCEPTED	1	1
GS-16	0	0

DIRECTOR OF SCIENCE AND APPLICATIONS

	75	76
EXCEPTED	2	2
GS-16	0	0
GS-15	3	3
GS-14	3	3
ALL OTHER GS	12	12
TOTAL PERMANENT	20	20

EARTH OBSERVATIONS DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0

DIRECTOR OF LIFE SCIENCES

	75	76
EXCEPTED	2	2
GS-16	0	0
GS-15	1	1
GS-14	0	0
ALL OTHER GS	5	5
TOTAL PERMANENT	8	8

BIOENGINEERING SYSTEMS DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0

DIRECTOR
FLIGHT OPER

EXCEPTED
GS-16
GS-15
GS-14
ALL OTHER GS
TOTAL PERMANENT

ASTRONA

EXCEPTED
GS-16
GS-15

SPACE CENTER
XAS

DIRECTOR
PUTY DIRECTOR

	75	76
D	4	4
	0	0
	1	1
	0	0
ER GS	6	6
ERMANENT	11	11

LEGAL OFFICE

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	2	2
GS-14	3	3
ALL OTHER GS	6	6
TOTAL PERMANENT	12	12

PUBLIC AFFAIRS OFFICE

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	1	1
GS-14	4	4
ALL OTHER GS	25	25
TOTAL PERMANENT	30	30

TECHNICAL PLANNING OFFICE

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	2	2
GS-14	3	3
ALL OTHER GS	7	7
TOTAL PERMANENT	12	12

SPACE SHUTTLE PROGRAM OFFICE

	75	76
EXCEPTED	3	3
GS-16	2	2
GS-15	29	29
GS-14	19	19
ALL OTHER GS	34	34
TOTAL PERMANENT	87	87

PROGRAM OPERATIONS OFFICE

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	17	17
GS-14	36	36
ALL OTHER GS	69	69
TOTAL PERMANENT	122	122

SPACE SHUTTLE ORBITER PROJECT OFFICE

	75	76
EXCEPTED	2	2
GS-16	2	2
GS-15	9	9
GS-14	9	9
ALL OTHER GS	27	27
TOTAL PERMANENT	49	49

DIRECTOR OF LIFE SCIENCES

	75	76
EXCEPTED	2	2
GS-16	0	0
GS-15	1	1
GS-14	0	0
ALL OTHER GS	5	5
TOTAL PERMANENT	8	8

BIOENGINEERING SYSTEMS DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	7	7
GS-14	5	5
ALL OTHER GS	22	22
TOTAL PERMANENT	34	34

BIOMEDICAL RESEARCH DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	3	3
GS-14	8	8
ALL OTHER GS	17	17
TOTAL PERMANENT	28	28

HEALTH SERVICES DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	2	2
GS-14	3	3
ALL OTHER GS	14	14
TOTAL PERMANENT	19	19

LIFE SCIENCES ASTRONAUT OFFICE

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	0	0
GS-14	3	3
ALL OTHER GS	2	2
TOTAL PERMANENT	6	6

DIRECTOR OF FLIGHT OPERATIONS

	75	76
EXCEPTED	3	3
GS-16	1	1
GS-15	6	6
GS-14	1	1
ALL OTHER GS	13	13
TOTAL PERMANENT	24	24

ASTRONAUT OFFICE

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	1	1
GS-14	0	0
ALL OTHER GS	17	17
TOTAL PERMANENT	19	19

AIRCRAFT OPERATIONS DIVISION

	75	76
EXCEPTED	1	1
GS-16	1	1
GS-15	0	0
GS-14	5	5
ALL OTHER GS	56	56
TOTAL PERMANENT	63	63

FLIGHT CONTROL DIVISION

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	9	9
GS-14	8	8
ALL OTHER GS	100	100
TOTAL PERMANENT	118	118

CREW TRAINING AND PROCEDURES DIVISION

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	3	3
GS-14	9	9
ALL OTHER GS	60	60
TOTAL PERMANENT	73	73

AIRCRAFT ENGINEERING DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	3	3
GS-14	5	5
ALL OTHER GS	46	46
TOTAL PERMANENT	54	54

DIRECTOR OF DATA SYSTEMS AND ANALYSIS

	75	76
EXCEPTED	3	3
GS-16	0	0
GS-15	5	5
GS-14	1	1
ALL OTHER GS	6	6
TOTAL PERMANENT	15	15

GROUND DATA SYSTEMS DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	6	6
GS-14	17	17
ALL OTHER GS	120	120
TOTAL PERMANENT	143	143

INSTITUTIONAL DATA SYSTEMS DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	6	6
GS-14	12	12
ALL OTHER GS	91	91
TOTAL PERMANENT	109	109

MISSION PLANNING AND ANALYSIS DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	11	11
GS-14	20	20
ALL OTHER GS	122	122
TOTAL PERMANENT	153	153

SPACECRAFT SOFTWARE DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	4	4
GS-14	5	5
ALL OTHER GS	28	28
TOTAL PERMANENT	37	37

FLIGHT SIMULATION DIVISION

	75	76
EXCEPTED	0	0
GS-16	1	1
GS-15	4	4
GS-14	6	6
ALL OTHER GS	47	47
TOTAL PERMANENT	58	58

SAFETY, RELIABILITY AND QUALITY ASSURANCE OFFICE

	75	76
EXCEPTED	2	2
GS-16	0	0
GS-15	14	14
GS-14	24	24
ALL OTHER GS	133	133
TOTAL PERMANENT	173	173

EARTH RESOURCES LABORATORY (ATMTF)

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	3	3
GS-14	1	1
ALL OTHER GS	21	21
TOTAL PERMANENT	25	25

ADMINISTRATION CENTER

PUBLIC AFFAIRS OFFICE

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	1	1
GS-14	4	4
ALL OTHER GS	25	25
TOTAL PERMANENT	30	30

TECHNICAL PLANNING OFFICE

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	2	2
GS-14	3	3
ALL OTHER GS	7	7
TOTAL PERMANENT	12	12

SPACE SHUTTLE PROGRAM OFFICE

	75	76
EXCEPTED	3	3
GS-16	2	2
GS-15	29	29
GS-14	19	19
ALL OTHER GS	34	34
TOTAL PERMANENT	87	87

SPACE SHUTTLE ORBITER PROJECT OFFICE

	75	76
EXCEPTED	2	2
GS-16	2	2
GS-15	9	9
GS-14	9	9
ALL OTHER GS	27	27
TOTAL PERMANENT	49	49

DIRECTOR OF FLIGHT OPERATIONS

	75	76
EXCEPTED	3	3
GS-16	1	1
GS-15	6	6
GS-14	1	1
ALL OTHER GS	13	13
TOTAL PERMANENT	24	24

DIRECTOR OF DATA SYSTEMS AND ANALYSIS

	75	76
EXCEPTED	3	3
GS-16	0	0
GS-15	5	5
GS-14	1	1
ALL OTHER GS	6	6
TOTAL PERMANENT	15	15

SAFETY, RELIABILITY AND QUALITY ASSURANCE OFFICE

	75	76
EXCEPTED	2	2
GS-16	0	0
GS-15	14	14
GS-14	24	24
ALL OTHER GS	133	133
TOTAL PERMANENT	173	173

ASTRONAUT OFFICE

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	1	1
GS-14	0	0
ALL OTHER GS	17	17
TOTAL PERMANENT	19	19

AIRCRAFT OPERATIONS DIVISION

	75	76
EXCEPTED	1	1
GS-16	1	1
GS-15	0	0
GS-14	5	5
ALL OTHER GS	56	56
TOTAL PERMANENT	63	63

FLIGHT CONTROL DIVISION

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	9	9
GS-14	8	8
ALL OTHER GS	100	100
TOTAL PERMANENT	118	118

CREW TRAINING AND PROCEDURES DIVISION

	75	76
EXCEPTED	1	1
GS-16	0	0
GS-15	3	3
GS-14	9	9
ALL OTHER GS	60	60
TOTAL PERMANENT	73	73

AIRCRAFT ENGINEERING DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	3	3
GS-14	5	5
ALL OTHER GS	46	46
TOTAL PERMANENT	54	54

GROUND DATA SYSTEMS DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	6	6
GS-14	17	17
ALL OTHER GS	120	120
TOTAL PERMANENT	143	143

INSTITUTIONAL DATA SYSTEMS DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	6	6
GS-14	12	12
ALL OTHER GS	91	91
TOTAL PERMANENT	109	109

MISSION PLANNING AND ANALYSIS DIVISION

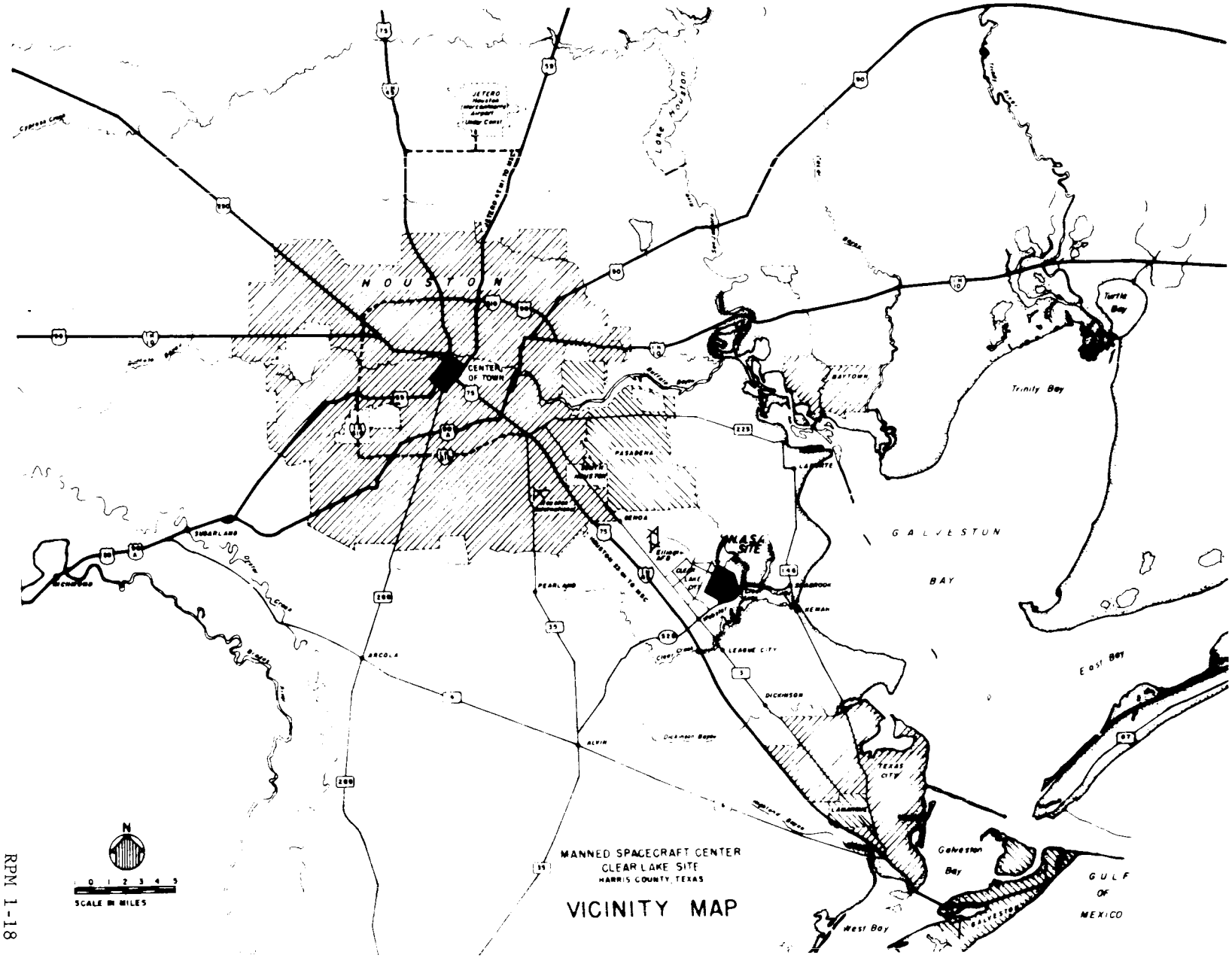
	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	11	11
GS-14	20	20
ALL OTHER GS	122	122
TOTAL PERMANENT	153	153

SPACECRAFT SOFTWARE DIVISION

	75	76
EXCEPTED	0	0
GS-16	0	0
GS-15	4	4
GS-14	5	5
ALL OTHER GS	28	28
TOTAL PERMANENT	37	37

FLIGHT SIMULATION DIVISION

	75	76
EXCEPTED	0	0
GS-16	1	1
GS-15	4	4
GS-14	6	6
ALL OTHER GS	47	47
TOTAL PERMANENT	58	58


HOUSTON
CENTER OF TOWN
PASADENA
BAYTOWN
LA PORTE
SEABROOK
KEMAH
LEAGUE CITY
DICKINSON
TEXAS CITY
GALVESTON
BAY
Trinity Bay
East Bay
Galveston Bay
West Bay
GULF OF MEXICO
SUGAR LAND
ARCOLA
ALVIN
PEARLAND
MANNED SPACECRAFT CENTER
CLEAR LAKE SITE
HARRIS COUNTY, TEXAS
VICINITY MAP
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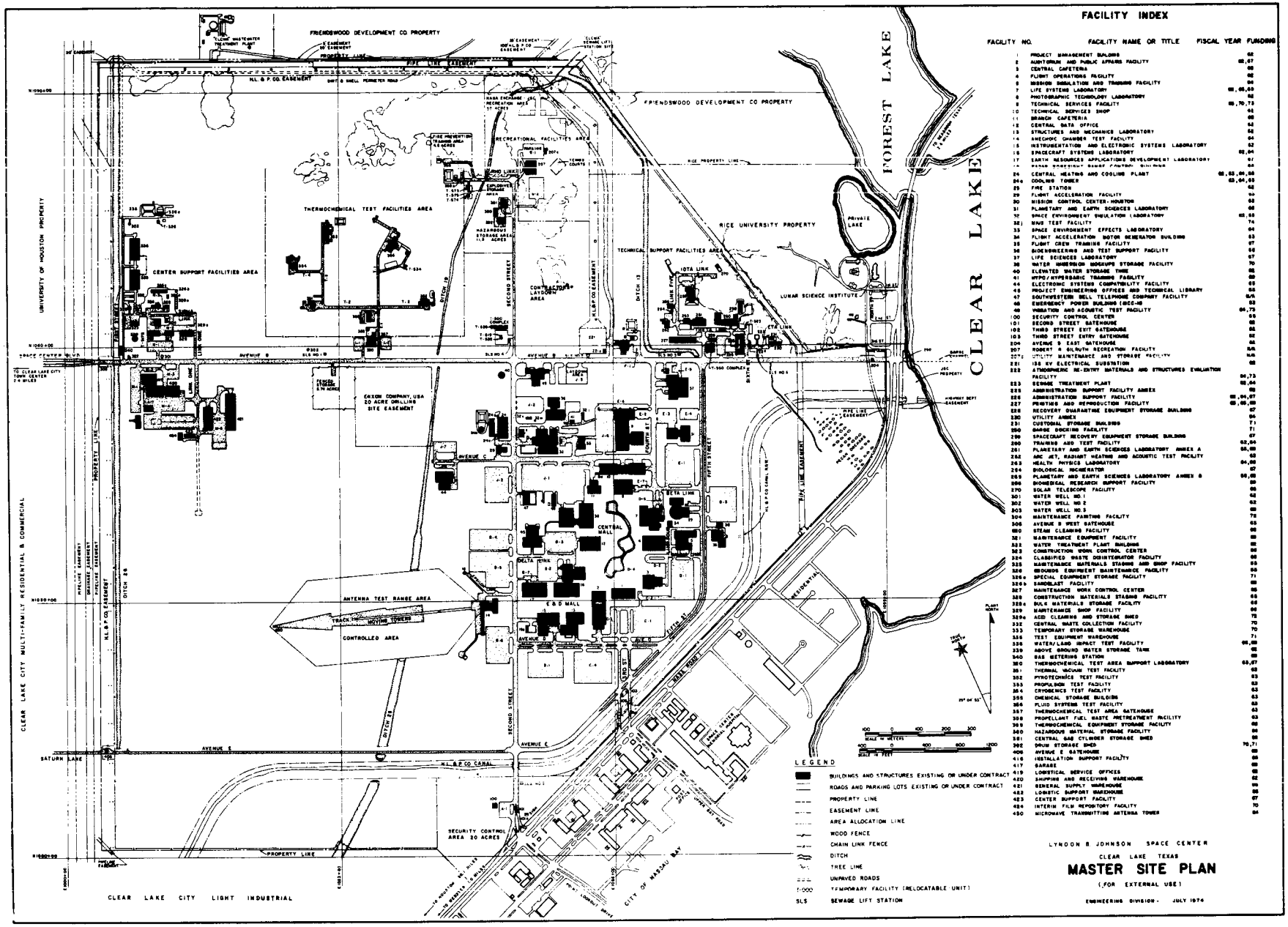

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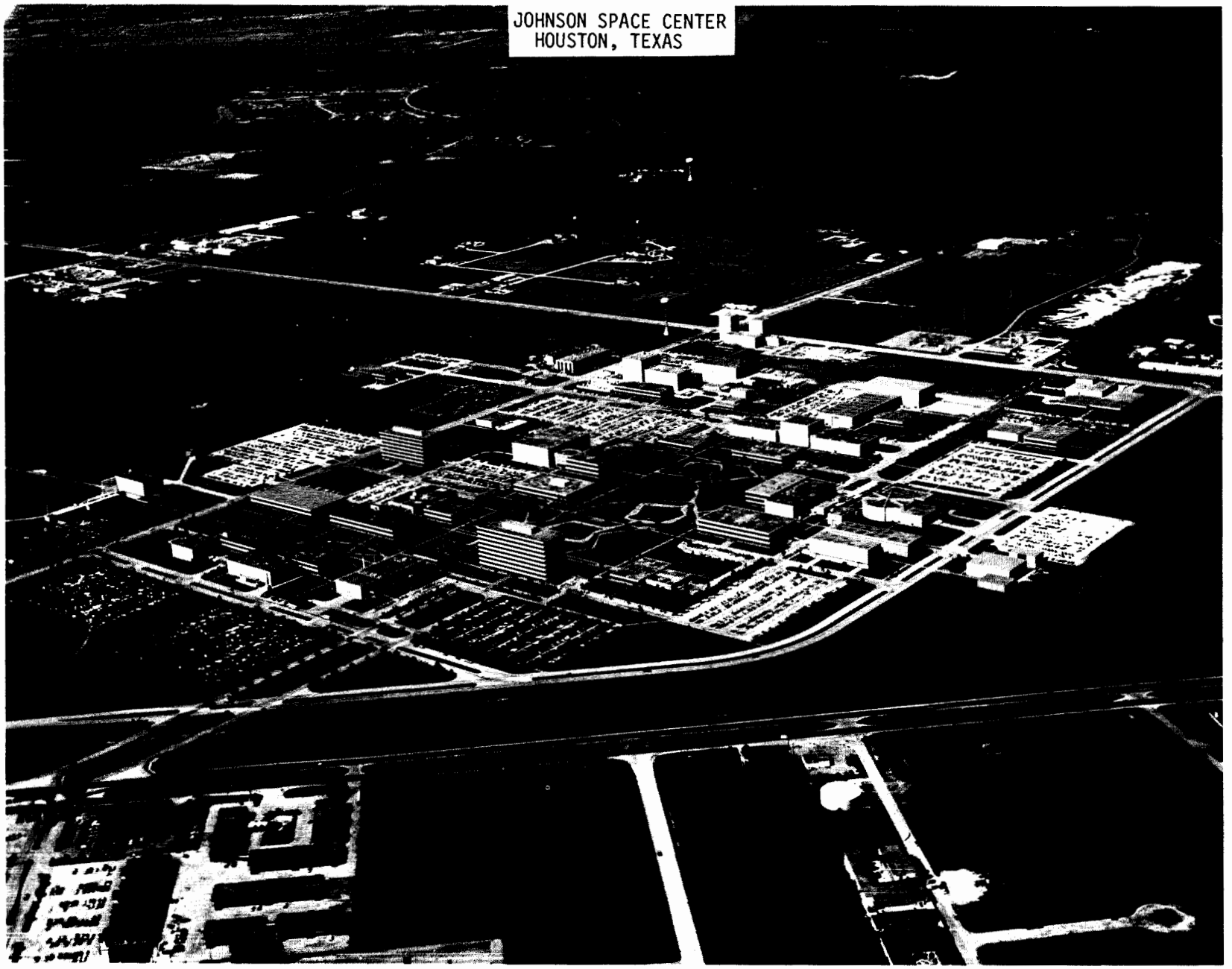
LYNDON B. JOHNSON SPACE CENTER

CLEAR LAKE TEXAS

MASTER SITE PLAN

(FOR EXTERNAL USE)

ENGINEERING DIVISION - JULY 1974


JOHNSON SPACE CENTER
HOUSTON, TEXAS

RESEARCH AND PROGRAM MANAGEMENT

FISCAL YEAR 1976 ESTIMATES

JOHN F. KENNEDY SPACE CENTER

DESCRIPTION

Operations at the John F. Kennedy Space Center are conducted at two primary locations:

1. At the Kennedy Space Center, which is situated approximately 50 miles east of Orlando, Florida, in northeast Brevard County. The total land and water area occupied by the installation is 140,393 acres. Breakdown of this acreage is as follows:

NASA-Owned	84,031
Easement, Banana River Causeway	271
Easement, Indian River Causeway	296
Deed of Dedication, Florida-Owned, Submerged Lands	55,795
Total	140,393

In addition, the Kennedy Space Center is responsible for the operation and maintenance of certain facilities within the Eastern Test Range launch area.

2. At the Western Test Range, which is located at Vandenberg Air Force Base, in Santa Barbara County, 6 miles west of Lompoc, California, and 160 miles north of Los Angeles, California. Unmanned launch operations are accomplished through a host-tenant agreement with the Air Force.

The total capital investment at the Kennedy Space Center and the Western Test Range, including fixed assets in progress and contractor-held facilities at various locations as of June 30, 1974, was $1,307,186,000.

MISSION

The Kennedy Space Center was established at Cape Canaveral, Florida, as a separate Center within NASA in July 1962. It serves as the primary Center for the test, checkout, and launch of space vehicles. This presently includes launch of manned and unmanned vehicles at the Kennedy Space Center, the Air Force Eastern Test Range, and the Air Force Western Test Range. The Apollo Soyuz Test Project is scheduled to be launched at KSC early in FY 1976. Concurrently, KSC is carrying forward the design and development of launch and landing facilities and ground support equipment for the Shuttle program.

The Kennedy Space Center is specifically responsible for:

1. Launch vehicle preparation and checkout.

2. Spacecraft and payload preparation and checkout.

3. Launch facility design, construction, maintenance, and operations, including advanced planning and studies leading to development of new launch operation concepts and techniques.

4. Final integration and integrated checkout of vehicle, spacecraft and launch facilities, and the conduct of actual launch operations.

5. Operation and coordination of supporting facilities, ground support equipment, and tracking and data acquisition and logistics support required for operation of all NASA activities at the Eastern and Western Test Ranges.

6. Technical and administrative support services for all NASA elements located in the area.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

Functions	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
I. Personnel and Related Costs...	$51,749	$54,291	$53,717	$54,242	$14,587
II. Travel.....	1,625	1,456	1,582	1,764	664
III. Facilities Services.....	25,179	25,972	25,452	24,488	8,961
IV. Technical Services	6,462	6,167	5,487	5,180	2,190
V. Administrative Support.....	8,540	8,853	9,658	9,300	3,351
Total, fund requirements....	$93,555	$96,739	$95,896	$94,974	$29,753

Distribution of Permanent Positions by Program

Over two-thirds of Kennedy's permanent positions are used in direct support of the various R&D programs. The following table summarizes the actual and planned utilization of positions for direct program activity and for indirect support.

Direct Positions	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
Manned Space Flight					
Space shuttle.....	727	423	653	1,223	1,223
Space flight operations...	744	1,025	755	161	161
Advanced missions.....	5	2	5	5	5
Space Science					
Launch vehicle operations.	259	257	274	292	292
Applications					
Space applications.....	23	27	34	40	40
Aeronautics and Space Technology					
Space and nuclear research and technology.....	2	---	3	3	3
Subtotal, positions by program.....	1,760	1,734	1,724	1,724	1,724
Indirect Positions					
Director and staff.....	93	92	93	93	93
Administrative support....	401	428	387	387	387
Research and development support.....	55	55	55	55	55
Subtotal, indirect positions.....	549	575	535	535	535
Total, permanent positions..	2,309	2,309	2,259	2,259	2,259

PERSONNEL AND RELATED COSTS

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
I. PERSONNEL AND RELATED COSTS.....	$51,749	$54,291	$53,717	$54,242	$14,587
Basis of Fund Requirements					
A. Compensation and Benefits:					
1. Compensation:					
a. Permanent positions.....	$46,541	$48,692	$47,956	$48,226	$12,945
b. Nonpermanent positions.....	629	670	679	676	250
c. Reimbursable details.....	19	---	28	103	26
d. Overtime and other compensation..	296	426	460	389	111
Subtotal, Compensation..	$47,485	$49,788	$49,123	$49,394	$13,332
2. Benefits:	$4,020	$4,118	$4,174	$4,428	$1,149
Subtotal, Compensation and Benefits.....	$51,505	$53,906	$53,297	$53,822	$14,481
B. Supporting Costs:					
1. Transfer of personnel.....	$43	$60	$70	$70	$18
2. Personnel training..	201	325	350	350	88
Subtotal, Supporting Costs.....	$244	$385	$420	$420	$106
Total, Personnel and Related Costs.....	$51,749	$54,291	$53,717	$54,242	$14,587
1. Compensation.....	$47,485	$49,788	$49,123	$49,394	$13,332
a. Permanent positions.	$46,541	$48,692	$47,956	$48,226	$12,945

The current estimate for 1975 is decreased $736 from the 1975 budget estimate due to a reduction in the personnel ceiling of 50 positions and a reduction to NASA costs to reflect reimbursements for launch services received from other users. These reductions are partially offset by the cost of the October 1974 civil service pay raise. The increase of $270 in 1976 reflects the full year cost of the 1974 pay raise, plus the cost of promotions and within-grade advances, and the extra day in 1976 partially offset by the full year's savings of the 1975 employment reduction.

Basis of Cost for Permanent Positions
(Thousands of Dollars)

In 1976 the cost of permanent positions will be $48,226 an increase of $270 from 1975. This increase results as follows:

Cost of permanent positions in 1975.....		$47,956
Cost increases:		+1,773
Within grade advances and career development		
Full year effect of 1975 actions.....	+$490	
Partial year effect of 1976 actions.....	+492	
Full year effect of October 1974 pay raise.....	+605	
Additional extra day.....	+186	
Cost decreases:		-1,503
Full year effect of 1975 manpower reductions....	-$720	
Turnover savings		
Full year effect of 1975 actions.....	-394	
Partial year effect of 1976 actions.....	-389	
Cost of permanent positions in 1976.....		$48,226

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Dollars in Thousands)				
b. Nonpermanent positions					
1. Cost.....	$629	$670	$679	$676	$250
2. Number of manyears	97	96	100	100	37

The FY 1976 plan includes 100 manyears to support the following programs:

Distribution of Nonpermanent Manyears by Program

	Manyears
College Cooperative Training	47
Summer Employment	10
Opportunity Programs	31
Other Temporary Employment	12
Total	100

The current estimate for 1975 is increased from the 1975 budget estimate primarily as a result of the October 1974 pay increase. The program for 1976 is planned at the 1975 level.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
c. Reimbursable details	$19	---	$28	$103	$26

The current estimate for 1975 includes funding for the services of two Air Force senior engineers who are participating in the Shuttle program development (i.e., software applications and GSE requirements). Three additional Air Force engineers and a logistician will come on board in 1976 and will also participate in Shuttle development (i.e., maintainability and flight test support). 1976 reflects the full year cost of these six Air Force personnel.

d. Overtime and other compensation	$296	$426	$460	$389	$111

The major requirement for overtime is in direct support of test, integration and checkout of vehicle subsystems and systems, and in preparation of the total vehicle (including spacecraft) for launch. The current estimate for 1975 allows for a general schedule salary increase not included in the 1975 budget estimate. The decrease in 1976 is a result of continuing efforts to reduce overtime costs to the lowest level consistent with mission requirements. The amount of overtime required in each fiscal year is substantially a function of launch rate activity.

2. Benefits	$4,020	$4,118	$4,174	$4,428	$1,149

The following table distributes these costs by major categories:

Category of Cost	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
Contribution to the Civil Service Retirement Fund..	$3,274	$3,450	$3,401	$3,497	$940
Contribution for employee life insurance.....	171	155	182	192	49
Contribution to employee health insurance.....	546	430	566	714	154
FICA.....	16	16	17	17	5
Incentive awards....	7	15	8	8	1
Severance pay.....	6	52	---	---	---
Total.....	$4,020	$4,118	$4,174	$4,428	$1,149

The current estimate for 1975 has increased over the 1975 budget estimate due to the large increase in the cost of health insurance rates. In addition, the Government's contribution to Federal Health Insurance was increased effective January 1975. The overall increase of $254 in 1976 is primarily for the full year's cost of the health insurance rate increase and the increased Government contribution.

B. Supporting Costs.....	$244	$385	$420	$420	$106
1. Transfer of personnel	$43	$60	$70	$70	$18

The estimated cost in 1975 and 1976 is based on anticipated additional cost per hire as recruitment efforts extend beyond the Southeastern Region.

2. Personnel training...	$201	$325	$350	$350	$88

The current estimate for 1975 is increased by $25 from the 1975 budget estimate reflecting the need for preparing the work force for Shuttle flight operations and reflecting increased activity in the Upward Mobility Program The 1976 estimate reflects a continuation of the 1975 level.

TRAVEL

II. TRAVEL.....	$1,625	$1,456	$1,582	$1,764	$664

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Basis of Fund Requirements

Summary of Travel by Major Category

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
A. Program Travel.....	$535	$609	$609	$778	$414
B. Meetings and Technical Seminars.....	97	43	43	46	19
C. Administrative Travel...	993	804	930	940	231
Total, Travel.....	$1,625	$1,456	$1,582	$1,764	$664
A. Program Travel.....	$535	$609	$609	$778	$414

The current estimate for 1975 reflects the effect of the recent legislation reducing Federal travel expenses, but is offset by an increase attributable to the KSC role in development of the Shuttle program, particularly in the area of launch and landing systems and facilities.

The 1976 program travel is further increased to support the accelerating pace of KSC's Shuttle ground systems development activities and includes costs for increased air fares.

B. Meetings and Technical Seminars.....	$97	$43	$43	$46	$19

The 1976 travel is continued at the 1975 level, adjusted to take into account increased air fares.

C. Administrative Travel...	$993	$804	$930	$940	$231

Administrative travel includes the services provided by the GSA motor pool operation, which constitutes over 80% of Administrative travel. The current estimate for 1975 is increased from the 1975 budget estimate due to increased GSA rate schedules for the motor pool. The 1976 travel is continued at the 1975 level, adjusted to take into account increased air fares.

FACILITIES SERVICES

III. FACILITIES SERVICES...	$25,179	$25,972	$25,452	$24,488	$8,961

Basis of Fund Requirements

Summary of Facilities Services

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
A. Rental of Real Property.....	$29	$10	$35	$5	$5
B. Maintenance and Related Services.....					
1. Maintenance, repair and alterations of buildings and grounds.....	$10,060	$10,810	$10,285	$8,970	$3,518
2. Custodial services..	7,875	8,332	6,866	7,047	3,202
3. Maintenance of equipment.....	348	376	377	404	136
Subtotal.....	$18,283	$19,518	$17,528	$16,421	$6,856
C. Operation of Facilities					
1. Utilities.....	$4,064	$4,247	$5,165	$5,365	$1,379
2. Supplies and equipment.....	2,803	2,197	2,724	2,697	721
Subtotal.....	$6,867	$6,444	$7,889	$8,062	$2,100
Total, Facilities Services.....	$25,179	$25,972	25,452	$24,488	$8,961

This category covers the cost of operating and maintaining the institutional facilities at Kennedy Space Center and NASA facilities at the Air Force Eastern Test Range, Cape Canaveral Air Force Station, Florida, and the Air Force Western Test Range, Vandenberg AFB, California. The dry land area exceeds 130 square miles. The size and the wide geographical distribution of facilities within KSC generate extremely heavy demand for facility services. Two hundred seventy five structural facilities contain 4.7 million square feet and require 25,000 tons of air conditioning; 12 heating plants; 212 linear miles of electrical lines and 150 unit substations; 23,000 linear feet of sewer lines, 15 sewage treatment plants, and 24 sewage lift stations; 18 elevators; 4 water storage tanks with a total capacity of 2.5 million gallons; and 231,000 linear feet of water lines. The roadway system includes 225 miles of highways and roads, and

3 bridges (2 over the Intracoastal Waterway). The Center is also responsible for 18 miles of navigable canals and channels and 87 square miles of submerged lands.

For economy reasons, KSC provides common base support to contractor employees as well as civil service employees. Costs are significantly affected by the on-site contractor population which is larger than the civil service population.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
A. Rental of Real Property.....	$29	$10	$35	$5	$5

The current estimate for 1975 is increased from the 1975 budget estimate due to an earlier requirement for rented space for the news media activity related to the ASTP launch. The reduction in the 1976 estimate reflects completion of ASTP. The Transition Period reflects the Center's normal obligation practice.

B. Maintenance and Related Services.....	$18,283	$19,518	$17,528	$16,421	$6,856
1. Maintenance, repair and alterations of buildings and grounds.....	$10,060	$10,810	$10,285	$8,970	$3,518

The current estimate for 1975 has been decreased from the 1975 budget estimate as a result of the Center's concentrated efforts to downmode facilities and excess equipment consistent with launch schedules. These efforts have also resulted in reduced maintenance requirements which will continue into 1976.

2. Custodial services.	$7,875	$8,332	$6,866	$7,047	$3,202

Services included in this category are security at KSC and Cape Canaveral Air Force Station (CCAFS), fire protection at KSC, janitorial services for KSC and NASA facilities at CCAFS and WTR, and minor contracts for refuse handling and laundry services. Security, fire protection, and janitorial services are provided by support contractors. The decrease in the current estimate for 1975 from the 1975 budget estimate reflects a change in the contract funding plan for janitorial services and a reduction in contractor manpower for security services. In 1976, janitorial services will be reduced further, but will be offset by the full year effect of contractor wage rate increases and an increased requirement for security services at ETR due to the Viking launch complex reaching full activation.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
3. Maintenance of equipment.....	$348	$376	$377	$404	$136

The level of service in 1976 will continue at the same rate as in 1975; however, the 1976 estimate reflects the full year cost of price escalation for materials and labor.

C. Operation of Facilities.....	$6,867	$6,444	$7,889	$8,062	$2,100
1. Utilities.....	$4,064	$4,247	$5,165	$5,365	$1,379

The current estimate for 1975 is increased over the 1975 budget estimate by 22% to reflect higher utility rates which are primarily a result of higher fuel costs. The increase in 1976 reflects the full year cost of utility rate increases, offset partially by a decrease in consumption.

2. Supplies and equipment.....	$2,803	$2,197	$2,724	$2,697	$721

The current estimate for 1975 is increased over the 1975 budget estimate because of higher unit prices of petroleum and other petroleum base products. The decrease in 1976 represents a general reduction in the level of inventory consistent with the completion of ASTP. The decrease is partially offset, however, by price escalation.

TECHNICAL SERVICES

IV. TECHNICAL SERVICES.....	$6,462	$6,167	$5,487	$5,180	$2,190

Basis of Fund Requirements

Summary of Technical Services

A. Automatic Data Processing					
1. Equipment.....	$119	$133	$133	$133	$47
2. Programming and operation services.	2,274	2,267	2,251	2,282	1,045
Subtotal.....	$2,393	$2,400	$2,384	$2,415	$1,092

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
B. Scientific and Technical Information and Educational Programs.....					
1. Operation of NASA technical libraries.....	$226	$161	$211	$201	$190
2. Educational/informational programs..	201	571	145	94	30
3. Scientific and technical information.....	3,642	3,035	2,747	2,470	878
Subtotal.....	$4,069	$3,767	$3,103	$2,765	$1,098
Total, Technical Services.....	$6,462	$6,167	$5,487	$5,180	$2,190
A. Automatic Data Processing.....	$2,393	$2,400	$2,384	$2,415	$1,092
1. Equipment.....	$119	$133	$133	$133	$47

The 1976 estimate reflects operations at the 1975 level.

2. Programming and operating services.	$2,274	$2,267	$2,251	$2,282	$1,045

The current estimate for 1975 is decreased from the 1975 budget estimate as a result of contract savings in planned overtime requirements. This decrease is partially offset by an increase due to the recategorization of supplies and materials in the amount of $130 from Scientific and Technical Information to this function. The 1976 estimate reflects essentially the same level of activity for these services as in 1975, with some price escalation in the key punch services contract.

B. Scientific and Technical Information and Educational Programs.....	$4,069	$3,767	$3,103	$2,765	$1,098
1. Operation of technical libraries....	$226	$161	$211	$201	$190

The KSC library is operated by a support contractor and currently contains over 31,000 books and bound journals; 168,000 technical documents; 650,000 microfilm documents; and 185,000 specifications and standards.

The current estimate for 1975 has increased from the 1975 budget estimate due to a recategorization of supplies and materials in the amount of $50 from Scientific and Technical Information to this function.

1976 reflects essentially the same level of activity as 1975. The transition period reflects the Center's normal practice of funding the contract for a full contract year on the renewal data.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
2. Educational/information programs...	$201	$571	$145	$94	$30

Funding provides for the gathering and dissemination of information about the Agency's programs to the mass communications media, the general public, and to the educational community at the elementary and secondary levels.

The current estimate for 1975 was decreased from the budget estimate to reflect the cancellation of exhibits for the proposed Visitor Information Center expansion.

The decrease in the 1976 estimate reflects a reduction in support contractor manpower as a further economy measure.

3. Scientific and technical information.....	$3,642	$3,035	$2,747	$2,470	$878

Scientific and technical information services are provided to the total KSC work force and include documentation, printing and reproduction, publication, photographic and translation services.

The current estimate for 1975 was decreased from the 1975 budget estimate due in part to a redistribution of supplies and materials in the amount of $180 to the automatic data processing function and technical libraries function.

The decrease in 1976 reflects a reduction of 19 support contractor man-years as a result of anticipated greater economies in this area.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
V. ADMINISTRATIVE SUPPORT.....	$8,540	$8,853	$9,658	$9,300	$3,351

Basis of Fund Requirements

Summary of Administrative Support

A. Communications					
1. Leased lines and long distance tolls.....	$553	$713	$757	$757	$165
2. Local telephone service.....	1,193	880	1,143	1,116	281
3. Other communications	104	112	96	94	30
Subtotal.....	$1,850	$1,705	$1,996	$1,967	$476
B. Administrative Printing.	$128	$143	$284	$292	$116
C. Supplies, Materials, and Equipment.....	$839	$911	$752	$823	$238
D. Transportation					
1. Center operations...	$952	$720	$1,165	$1,053	$356
2. Common carrier.....	121	106	126	127	37
Subtotal.....	$1,073	$826	$1,291	$1,180	$393
E. Administrative Support Services					
1. Installation support services.....	$3,764	$4,730	$4,499	$4,285	$1,504
2. Occupational medicine and environmental health.....	886	538	836	753	624
Subtotal.....	$4,650	$5,268	$5,335	$5,038	$2,128
Total, Administrative Support.....	$8,540	$8,853	$9,658	$9,300	$3,351

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
A. Communications.....	$1,850	$1,705	$1,996	$1,967	$476

The current estimate for 1975 is increased over the 1975 budget estimate to reflect current FTS rates. The decrease in 1976 represents a reduction in telephone instruments due to completion of ASTP, partially offset by rate increases.

B. Administrative Printing.	$128	$143	$284	$292	$116

The current estimate for 1975 is increased over the 1975 budget estimate in order to support increased Shuttle requirements. The increase in 1976 reflects the full year cost of wage and price adjustments.

C. Supplies, Materials, and Equipment.....	$839	$911	$752	$823	$238

The current estimate for 1975 is reduced from the 1975 budget estimate as a result of a Center-wide economy drive to reduce costs. The increase in 1976 results primarily from price escalation for supplies and equipment.

D. Transportation.....	$1,073	$826	$1,291	$1,180	$393

The increased estimate for 1975 over the budget estimate reflects the cost of engine replacement and instrumentation overhaul on the Gulfstream aircraft. Additionally, the 1975 estimate includes a greater than originally anticipated number of trucks to support the unmanned launch activity and increased requirements for facility modifications and minor construction in support of the Shuttle program. The decrease in 1976 is a return to a normal aircraft maintenance level partially offset by cost escalation.

E. Administrative Support Services.....	$4,650	$5,268	$5,335	$5,038	$2,128

The current estimate for 1975 is increased from the 1975 budget estimate as a result of an increase in support contractor manpower performing environmental health functions based on required conformance to the Occupational Safety and Health Act standards. The decrease in 1976 reflects a support contractor manpower reduction of 28 manyears in the logistics functional area due to completion of ASTP.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER

STAFFING SUMMARY

	FY 75	FY 76
EXCEPTED	30	30
GS-16	8	8
GS-15	115	115
GS-14	252	252
ALL OTHER GS	1850	1850
WB	4	4
TOTAL PERM.	2259	2259

DIRECTOR

	FY 75	FY 76
EXCEPTED	3	3
GS-16	--	--
GS-15	--	--
GS-14	--	--
ALL OTHER GS	3	3
TOTAL PERM.	6	6

CHIEF COUNSEL

	FY 75	FY 76
EXCEPTED	1	1
GS-16		
GS-15	1	1
GS-14	1	1
ALL OTHER GS	6	6
TOTAL PERM.	9	9

CENTER RESOURCES PLANNING & CONTROL OFFICE

	FY 75	FY 76
EXCEPTED		
GS-16	--	--
GS-15	1	1
GS-14	1	1
ALL OTHER GS	4	4
TOTAL PERM.	6	6

PUBLIC AFFAIRS OFFICE

	FY 75	FY 76
EXCEPTED	--	--
GS-16	--	--
GS-15	1	1
GS-14	2	2
ALL OTHER GS	19	19
TOTAL PERM.	22	22

SHUTTLE GROUND OPERATIONS OFFICE AT JSC

	FY 75	FY 76
EXCEPTED	1	1
GS-16	--	--
GS-15	--	--
GS-14	3	3
ALL OTHER GS	3	3
TOTAL PERM.	7	7

EXECUTIVE STAFF

	FY 75	FY 76
EXCEPTED	--	--
GS-16	--	--
GS-15	1	1
GS-14	2	2
ALL OTHER GS	5	5
TOTAL PERM.	8	8

EQUAL OPPORTUNITY PROGRAM OFFICE

	FY 75	FY 76
EXCEPTED	--	--
GS-16	--	--
GS-15	--	--
GS-14	--	--
ALL OTHER GS	5	5
TOTAL PERM.	5	5

QUALITY ASSURANCE OFFICE

	FY 75	FY 76
EXCEPTED	--	--
GS-16	--	--
GS-15	1	1
GS-14	2	2
ALL OTHER GS	13	13
TOTAL PERM.	16	16

BIOMEDICAL OFFICE

	FY 75	FY 76
EXCEPTED	1	1
GS-16	--	--
GS-15	--	--
GS-14	3	3
ALL OTHER GS	6	6
TOTAL PERM.	10	10

SAFETY OFFICE

	FY 75	FY 76
EXCEPTED	1	1
GS-16	--	--
GS-15	1	1
GS-14	1	1
ALL OTHER GS	49	49
TOTAL PERM.	52	52

MANAGER SHUTTLE PROJECTS OFFICE

	FY 75	FY 76
EXCEPTED	2	2
GS-16	--	--
GS-15	9	9
GS-14	22	22
ALL OTHER GS	35	35
TOTAL PERM.	68	68

MANAGER SCIENCES, APPLICATIONS AND ASTP OFFICE

	FY 75	FY 76
EXCEPTED	1	1
GS-16	--	--
GS-15	4	4
GS-14	3	3
ALL OTHER GS	33	33
TOTAL PERM.	41	41

DIRECTOR OF ADMINISTRATION

	FY 75	FY 76
EXCEPTED	2	2
GS-16	--	--
GS-15	7	7
GS-14	24	24
ALL OTHER GS	254	254
TOTAL PERM.	287	287

DIRECTOR LAUNCH OPERATIONS

	FY 75	FY 76
EXCEPTED	2	2
GS-16	1	1
GS-15	5	5
GS-14	8	8
ALL OTHER GS	7	7
TOTAL PERM.	23	23

DIRECTOR OF INSTALLATION SUPPORT

	FY 75	FY 76
EXCEPTED	1	1
GS-16	--	--
GS-15	6	5
GS-14	12	9
ALL OTHER GS	157	121
WB	4	4
TOTAL PERM.	180	140

DIRECTOR OF DESIGN ENGINEERING

	FY 75	FY 76
EXCEPTED	2	2
GS-16	--	--
GS-15	1	1
GS-14	1	1
ALL OTHER GS	4	4
TOTAL PERM.	8	8

DIRECTOR OF TECHNICAL SUPPORT

	FY 75	FY 76
EXCEPTED	2	2
GS-16	--	--
GS-15	2	2
GS-14	10	10
ALL OTHER GS	25	25
TOTAL PERM.	39	39

ASSOCIATE DIRECTOR FOR OPERATIONS

	FY 75	FY 76
EXCEPTED	1	1
GS-16	--	--
GS-15	5	5
GS-14	6	6
ALL OTHER GS	8	8
TOTAL PERM.	20	20

DIRECTOR LAUNCH VEHICLE OPERATIONS

	FY 75	FY 76
EXCEPTED	1	1
GS-16	--	
GS-15	19	19
GS-14	22	22
ALL OTHER GS	157	157
TOTAL PERM.	199	199

DIRECTOR SPACECRAFT OPERATIONS

	FY 75	FY 76
EXCEPTED	3	3
GS-16		
GS-15	14	14
GS-14	23	23
ALL OTHER GS	165	165
TOTAL PERM.	205	205

DIRECTOR UNMANNED LAUNCH OPERATIONS

	FY 75	FY 76
EXCEPTED	1	1
GS-16	--	--
GS-15	5	5
GS-14	18	18
ALL OTHER GS	184	184
TOTAL PERM.	208	208

ASSOCIATE DIRECTOR FOR FACILITIES & SYSTEMS MANAGEMENT

	FY 75	FY 76
EXCEPTED	1	1
GS-16	1	1
GS-15	5	5
GS-14	14	14
ALL OTHER GS	76	76
TOTAL PERM.	97	97

ASSOCIATE DIRECTOR FOR LPS DEVELOPMENT

	FY 75	FY 76
EXCEPTED	1	1
GS-16	--	--
GS-15	3	3
GS-14	8	8
ALL OTHER GS	83	83
TOTAL PERM.	95	95

ASSOCIATE DIRECTOR FOR DESIGN

	FY 75	FY 76
EXCEPTED	1	1
GS-16	3	3
GS-15	10	10
GS-14	22	22
ALL OTHER GS	162	162
TOTAL PERM.	198	198

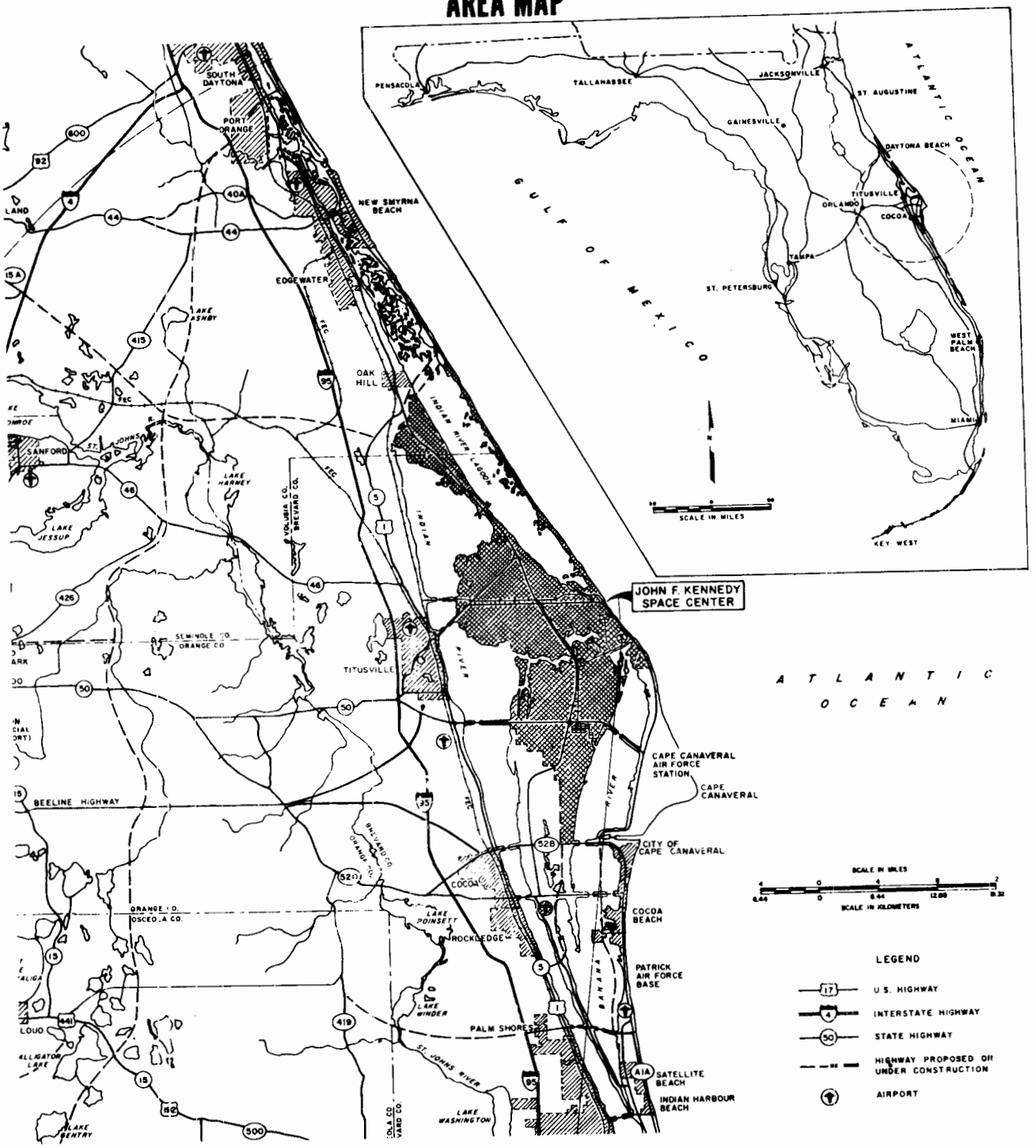
DIRECTOR OF INFORMATION SYSTEMS

	FY 75	FY 76
EXCEPTED	1	1
GS-16	2	2
GS-15	8	8
GS-14	28	28
ALL OTHER GS	205	205
TOTAL PERM.	244	244

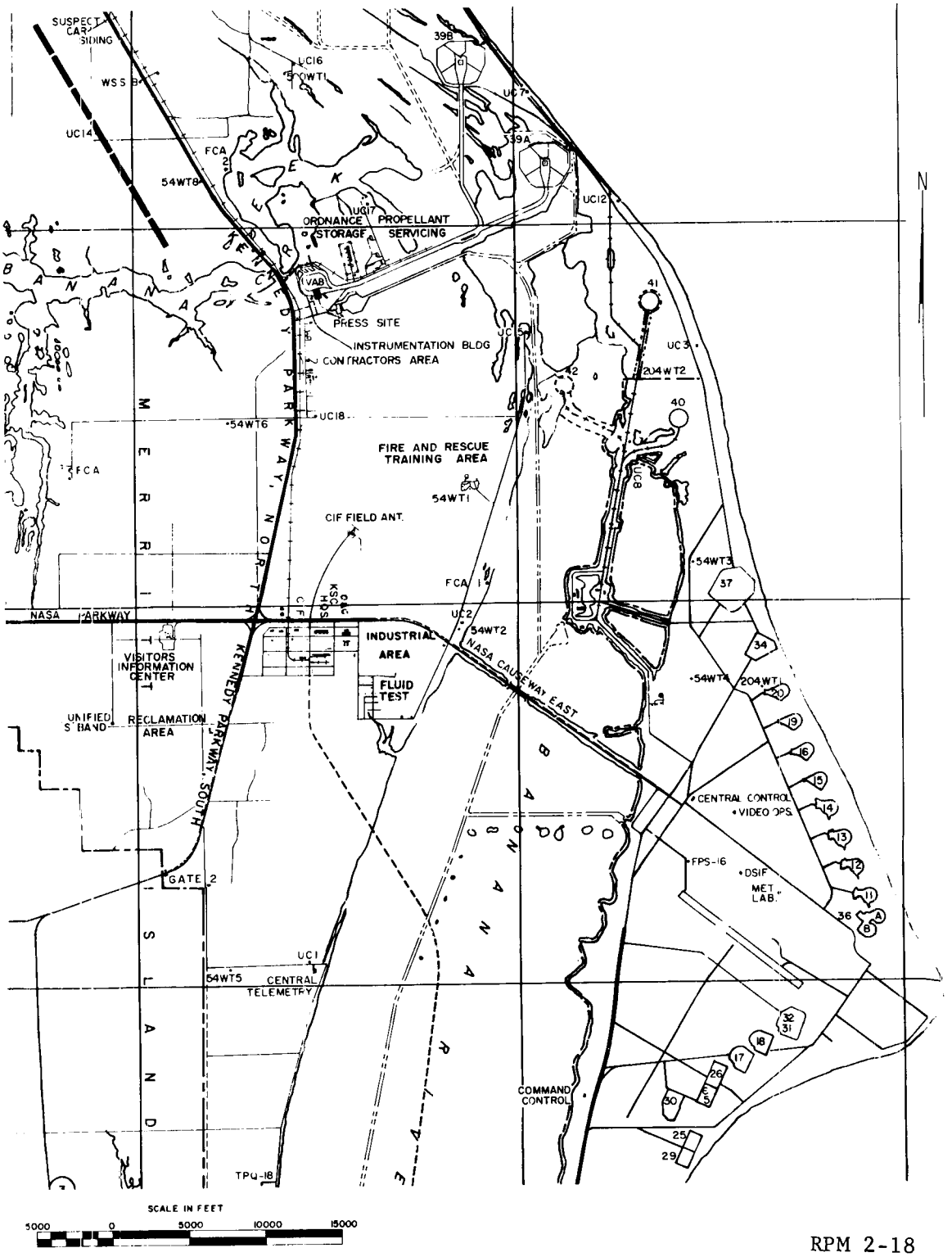
DIRECTOR OF SUPPORT OPERATIONS

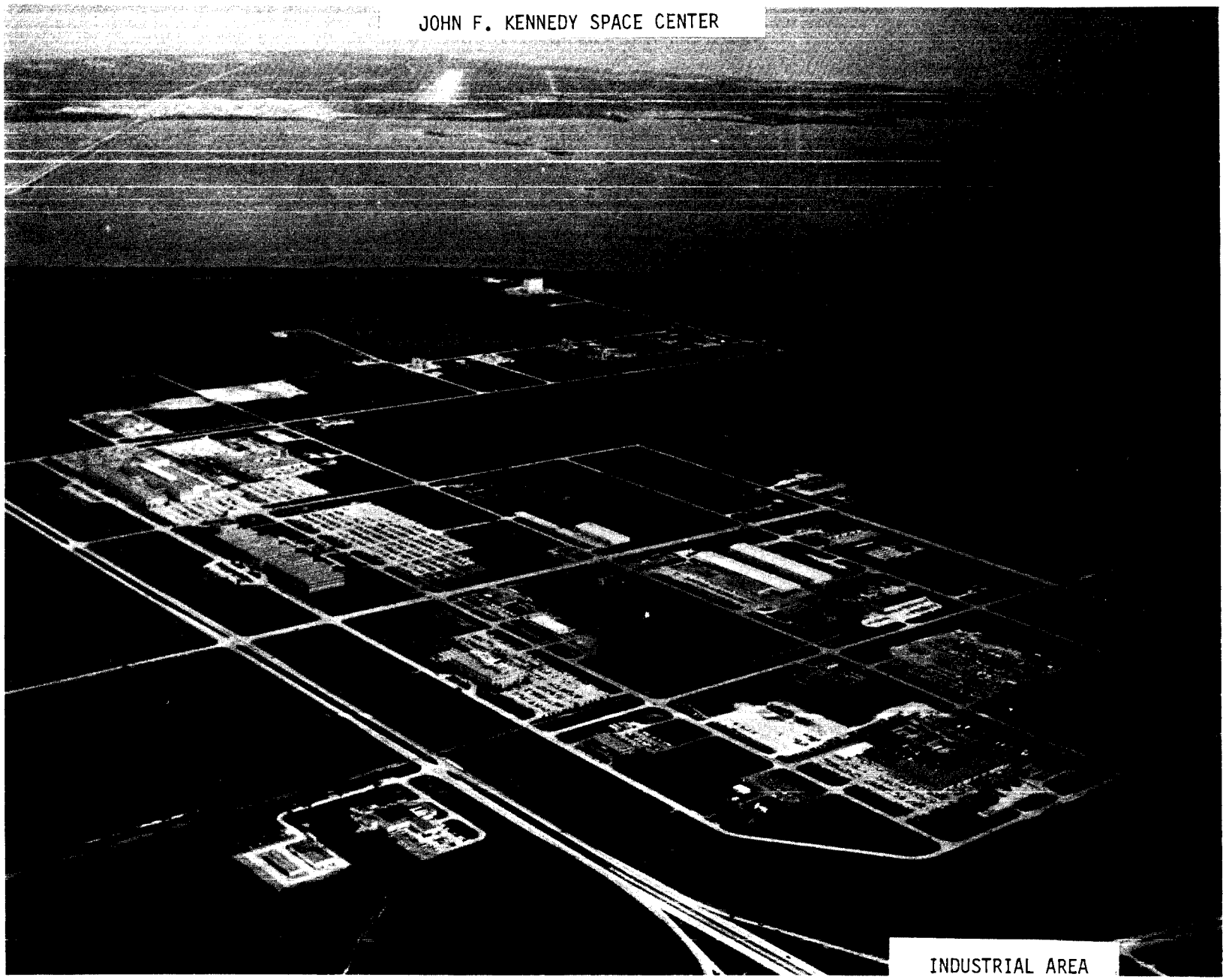
	FY 75	FY 76
EXCEPTED	1	1
GS-16	1	1
GS-15	6	7
GS-14	16	19
ALL OTHER GS	182	218
TOTAL PERM.	206	246

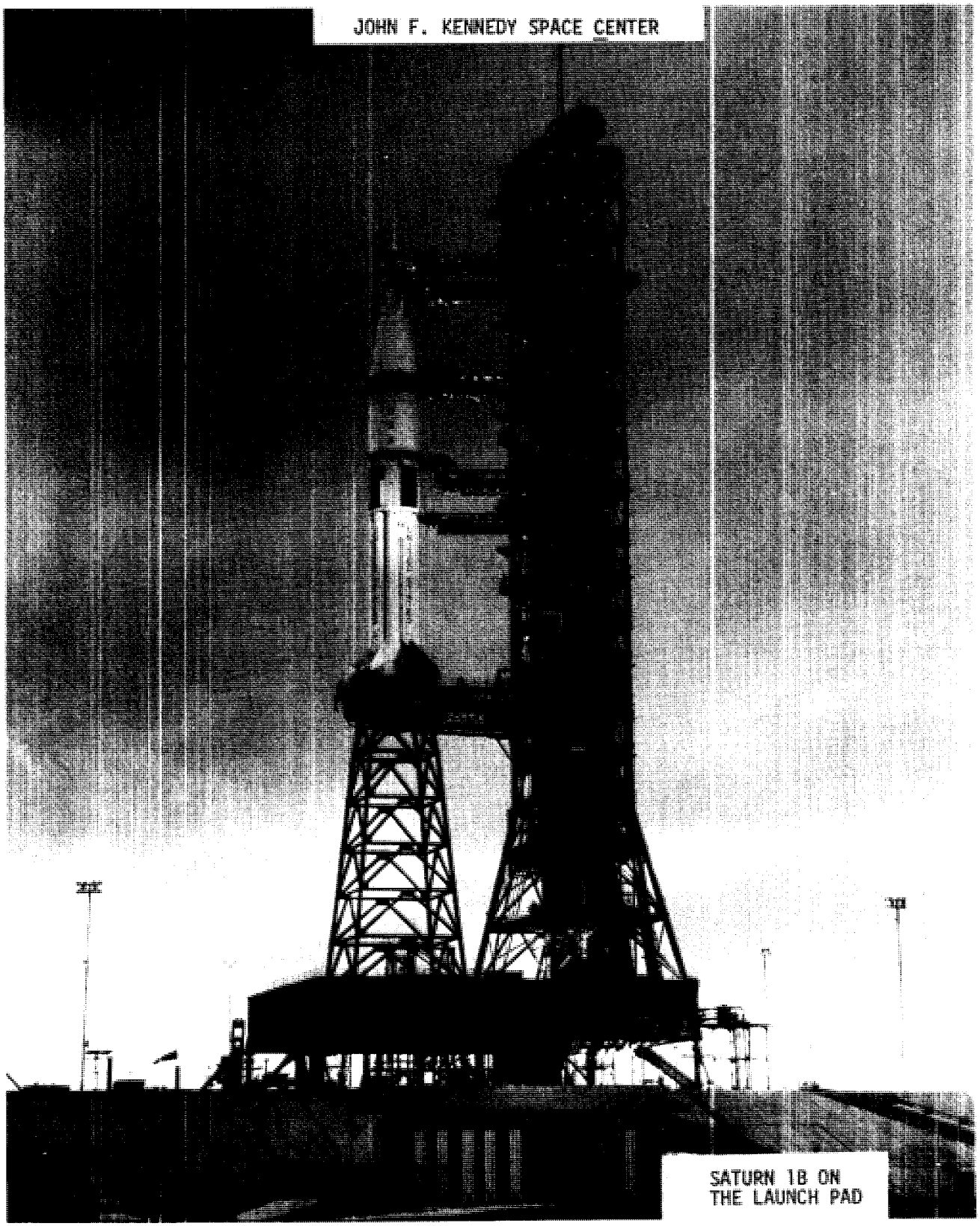
JOHN F. KENNEDY SPACE CENTER, NASA
FISCAL YEAR 1976 ESTIMATES
AREA MAP



JOHN F. KENNEDY SPACE CENTER, NASA
FISCAL YEAR 1976 ESTIMATES
LOCATION PLAN

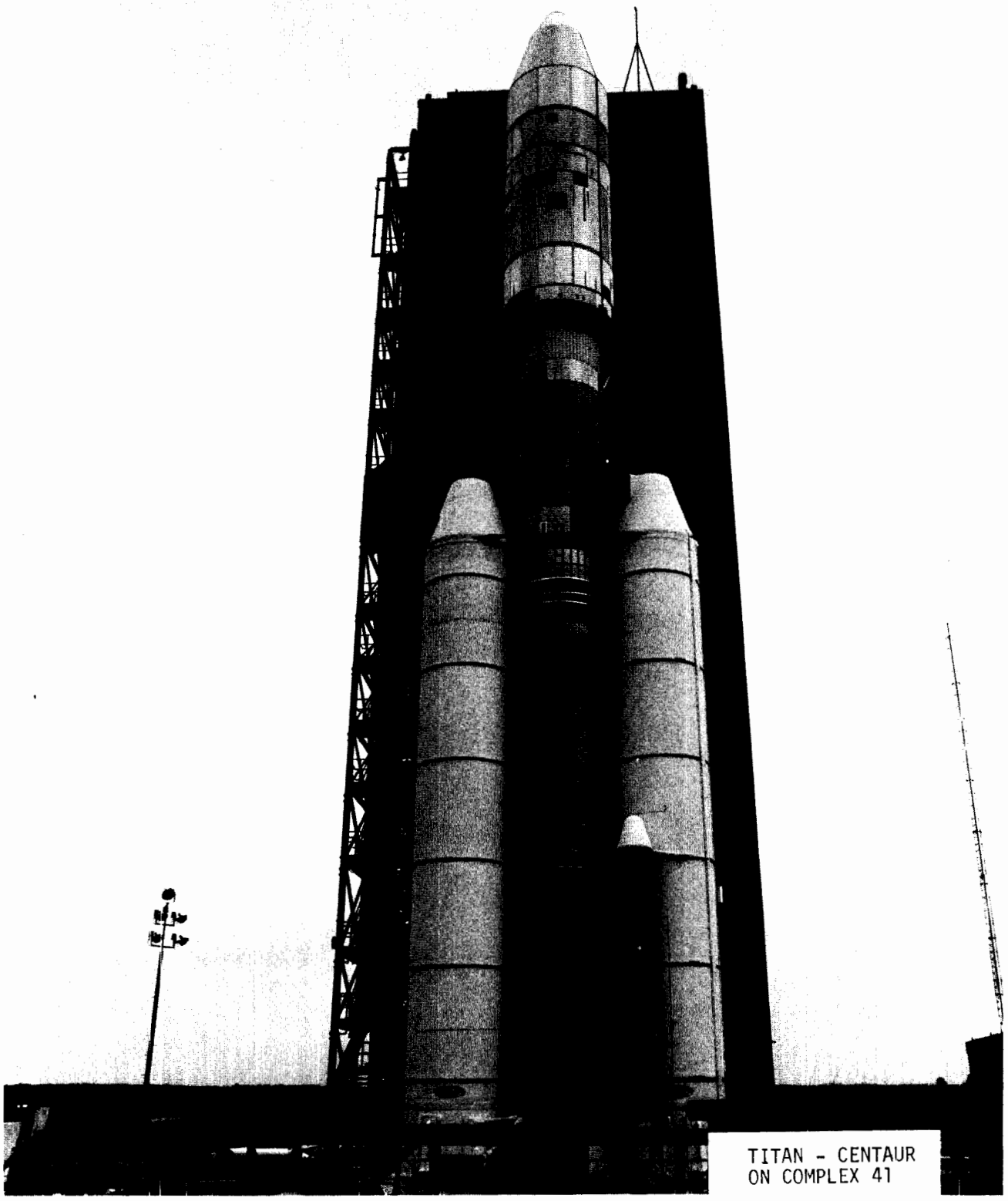



JOHN F. KENNEDY SPACE CENTER
INDUSTRIAL AREA

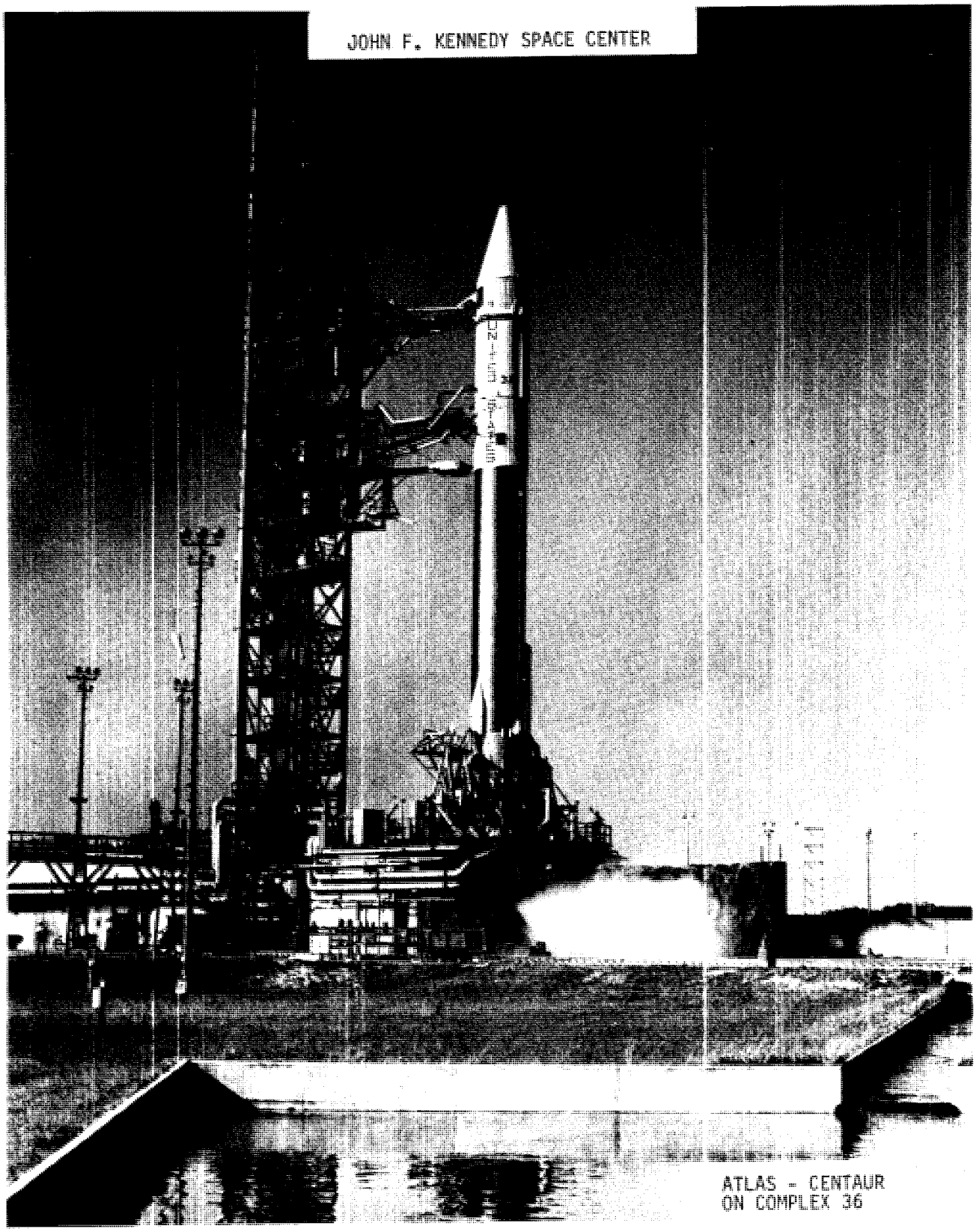


SATURN 1B ON THE LAUNCH PAD

JOHN F. KENNEDY SPACE CENTER

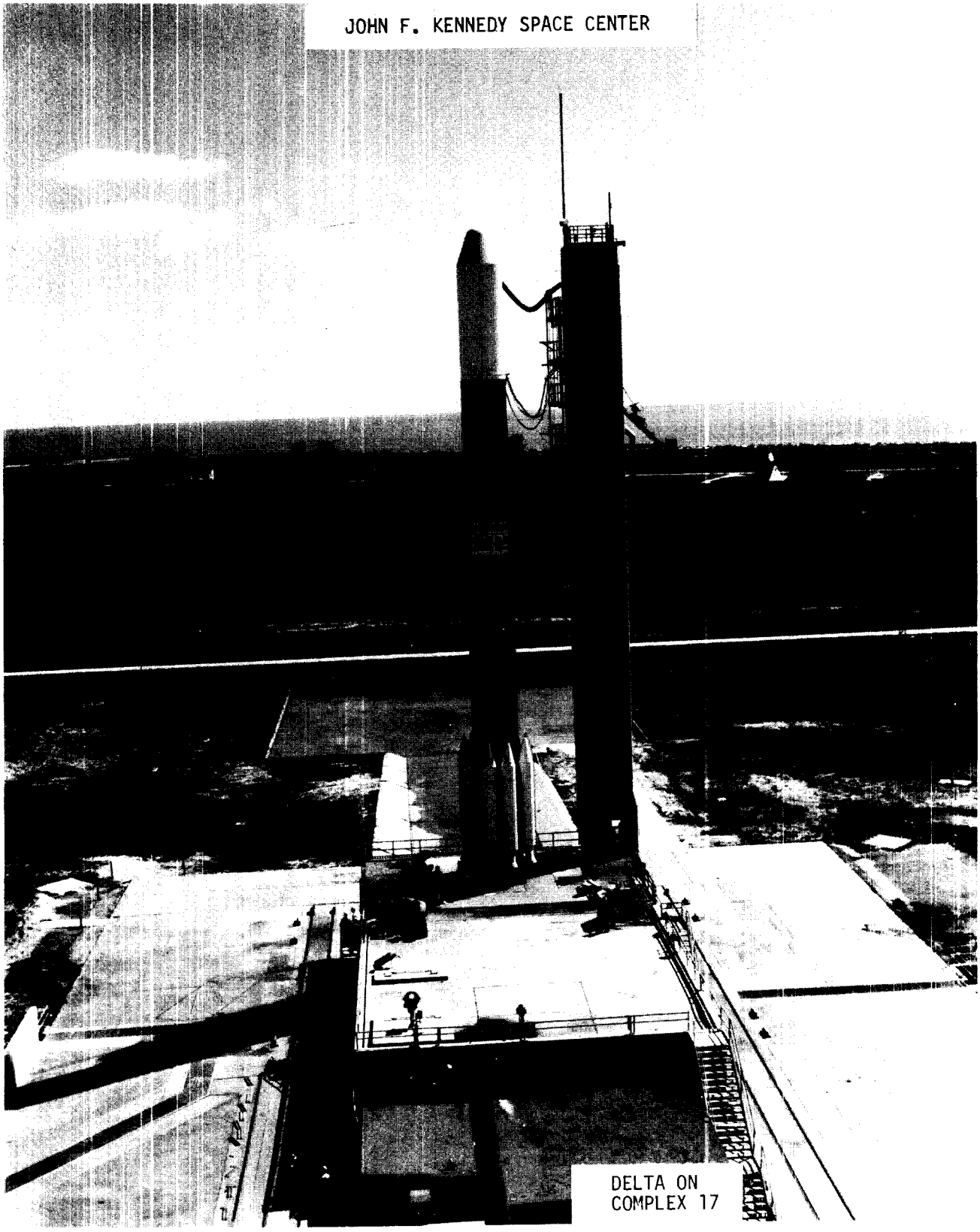


TITAN - CENTAUR
ON COMPLEX 41



ATLAS - CENTAUR
ON COMPLEX 36

RPM 2-22



RPM 2-23

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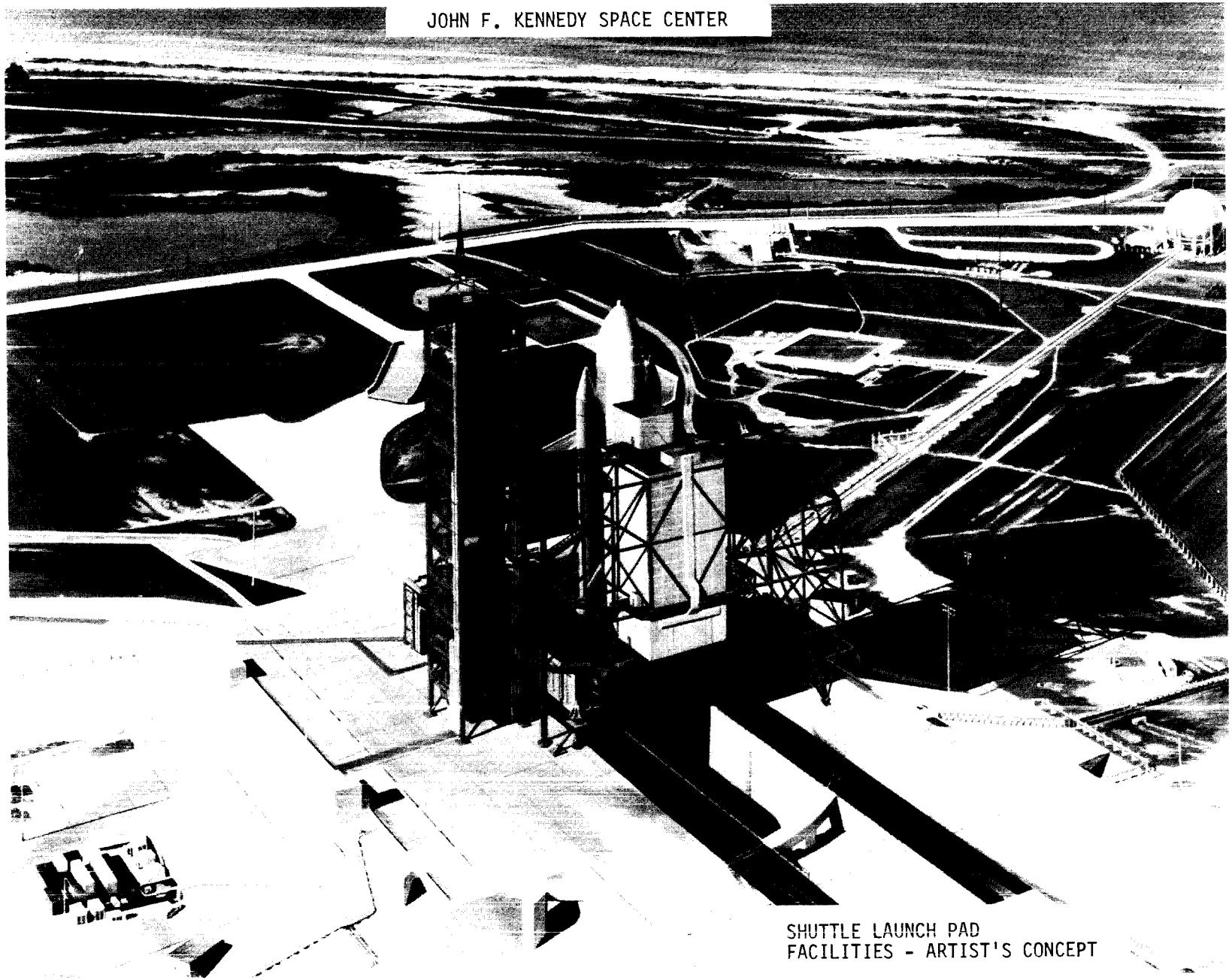

SHUTTLE LAUNCH PAD
FACILITIES - ARTIST'S CONCEPT

RESEARCH AND PROGRAM MANAGEMENT

FISCAL YEAR 1976 ESTIMATES

MARSHALL SPACE FLIGHT CENTER

DESCRIPTION

Operations at the Marshall Space Flight Center are conducted at three primary locations:

The main Marshall Space Flight Center site is near Huntsville, Alabama on Army property at the Redstone Arsenal. The Center occupies 1,840 acres under a nonrevocable use permit from the Army. The capital investment as of June 30, 1974, was approximately $420,285,000. Certain facilities such as the Redstone Arsenal Airfield and some utilities are used jointly by NASA and the Army. The Huntsville location has a deepwater access via the Tennessee, Ohio, and Mississippi Rivers.

The Michoud Assembly Facility is located 15 miles east of New Orleans, Louisiana. The Michoud Facility occupies 891 acres and provides 3,557,935 square feet of space, including the main assembly plant which has an area of 43 acres under one roof. The Facility is located on the Gulf Intracoastal Waterway and has deepwater access via the Mississippi River. The capital investment as of June 30, 1974, was approximately $158,015,000.

The Slidell Computer Complex, a facility located at Slidell, Louisiana, 20 miles northeast of the Michoud Assembly Facility occupies 14 acres and provides centralized computer services for Michoud, National Space Technology Laboratories, and associated contractors. The Slidell capital investment, as of June 30, 1974, was approximately $25,834,000.

The total capital investment of the Marshall Space Flight Center and its installations in Louisiana, including fixed assets in progress and contractor-held facilities at various locations as of June 30, 1974, was $820,203,000.

MISSION

The Marshall Space Flight Center (MSFC) at Huntsville, Alabama became a part of NASA in July 1960. Marshall serves as one of NASA's primary Centers for the design and development of space transportation systems, orbital systems, scientific payloads, and other systems for present and future space exploration. In addition to on-site activities at Huntsville, MSFC manages the Michoud Assembly Facility (MAF) at New Orleans, Louisiana and the Slidell Computer Complex at Slidell, Louisiana.

The Center has major responsibilities for direction and management of the following on-going activities:

1. Space Shuttle Projects:

a. Space Shuttle Main Engine - the high performance, reusable low cost throttleable liquid hydrogen, liquid oxygen fueled rocket engine, for the orbiter vehicle.

b. External Tank - providing the liquid hydrogen/liquid oxygen propellant for the orbiter vehicle during lift-off and to achieve orbital insertion.

c. Solid Rocket Booster - large solid propellant boosters, firing in parallel with the main engine, designed for retrieval, refurbishment and reuse.

d. Integration - participation with the lead Center in assuring that all projects are properly integrated into the overall Space Shuttle Program.

2. The Apollo Soyuz Test Project, including responsibility for providing the Saturn IB launch vehicle and associated ground support equipment, space vehicle analysis through spacecraft separation, launch and flight operations support, and certain experiments.

3. The High Energy Astronomy Observatory, including technical and program management of an orbital scientific program designed to obtain high quality, high resolution data on cosmic ray, gamma ray, and X-ray sources.

4. The Spacelab, in cooperation with the European Space Research Organization, will provide a versatile and economical laboratory and observatory facility for manned research and applications investigations and experimentation in earth orbit. Spacelab is a pressurized and habitable module which will be carried to and from orbit in the cargo bay of the Space Shuttle.

5. Other projects, such as the Gravitational Redshift (GP-A), a sounding rocket space probe designed for tests related to the equivalence principle of the Einstein Theory of Relativity; and the Laser Geodynamic Satellite (LAGEOS), a passive, solid sphere fitted with retro-reflector cube corners to permit accurate laser ranging from ground-based stations.

The Center has also been assigned the lead role in the study and definition of several additional programs, primarily involving space payload planning and Space Shuttle Utilization. These include the Interim Upper Stage/Space Tug, the Concept Verification Testing Activity (CVT), and the Large Space Telescope.

Marshall is also participating in NASA Earth Resources Survey program activities which are directed generally toward the application of space technology and associated managerial and technical disciplines to solve environmental problems in the surrounding geographic region including Alabama, Tennessee, Kentucky, Missouri, Louisiana, Mississippi, Georgia, and North Carolina.

In addition to these on-going assignments, the Center is deeply involved in a variety of other activities ranging from overall mission analyses of initial Shuttle missions to specific studies within the scientific and applications disciplines, including activities related to laser experiments, gravitational relativity, earth observation, solar power, earth physics, meteoroid studies, space processing, materials science, atmospheric science, magnetospheric physics, space plasma physics, zero-G cloud physics, a solar power residential heating and cooling demonstration project, and other scientific areas within the scope of NASA's mission.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
I. Personnel and Related Costs	$111,632	$106,029	$107,439	$105,900	$27,150
II. Travel.....	1,916	2,233	1,962	2,115	556
III. Facilities Services...	9,215	8,974	9,415	9,601	3,143
IV. Technical Services...	6,722	6,884	6,701	6,919	1,870
V. Administrative Support.....	7,159	5,598	5,799	5,971	1,653
Total, fund requirements	$136,644	$129,718	$131,316	$130,506	$34,372

Over two thirds of Marshall's permanent positions are used in direct support of the various R&D programs. The following table summarizes the actual and planned utilization of positions for direct program activity and for indirect support.

Permanent Positions by Program

Direct Positions Manned Space Flight	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
Space shuttle.....	1,291	1,788	1,450	1,523	1,523
Space flight operations.....	1,619	952	1,210	1,106	1,106
Advanced missions.	6	16	9	10	10

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
Space Science					
Physics and astronomy.....	330	388	381	398	398
Launch vehicle procurement.....	32	35	27	60	60
Applications					
Space Applications	114	140	126	114	114
Aeronautics and Space Technology					
Aeronautical research and technology..	14	13	13	13	13
Space and nuclear research and technology.....	60	66	44	44	44
Energy					
Energy Technology Applications....	30	--	44	36	36
Technology Utilization.....	13	13	10	10	10
Subtotal, direct positions.....	3,509	3,411	3,314	3,314	3,314

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Dollars in Thousands)			
Indirect Positions					
Director and staff..	134	111	139	139	139
Administration support.....	786	599	621	621	621
Research and development support.....	71	24	39	39	39
Subtotal, indirect positions.....	991	734	799	799	799
Total, permanent positions.....	4,500	4,145	4,113	4,113	4,113
PERSONNEL AND RELATED COSTS					
I. PERSONNEL AND RELATED COSTS...	$111,632	$106,029	$107,439	$105,900	$27,150
Basis of Fund Requirements					
A. Compensation and Benefits:					
1. Compensation					
a. Permanent positions.	$100,456	$93,529	$95,234	$94,642	$24,137
b. Nonpermanent positions.	1,209	1,411	1,662	1,641	608
c. Reimbursable details...	87	241	36	69	18
d. Overtime and other compensation.	545	643	595	606	151
Subtotal, Compensation.....	$102,297	$95,824	$97,527	$96,958	$24,914
2. Benefits.....	$8,984	$9,805	$9,508	$8,538	$2,135
Subtotal, Compensation and Benefits.	$111,281	$105,629	$107,035	$105,496	$27,049

B. Supporting Costs:

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Dollars in Thousands)			
1. Transfer of Personnel.	$119	$120	$120	$120	$30
2. Personnel Training..	232	280	284	284	71
Subtotal, Supporting Costs.....	$351	$400	$404	$404	$101
Total, Personnel and Related Costs.....	$111,632	$106,029	$107,439	$105,900	$27,150
1. Compensation	$102,297	$95,824	$97,527	$96,958	$24,914
a. Permanent positions	$100,456	$93,529	$95,234	$94,642	$24,137

The difference between the 1975 budget estimate and the 1975 current estimate is the cost of the October 1974 pay raise. This is partially offset by the savings resulting from the reduction in manyears. The decrease in 1976 is attributed to the full year impact of the February 1975 reduction-in-force which more than offsets the full year cost of the pay raise.

Basis of Cost for Permanent Positions

In 1976 the cost of permanent positions will be $94,642,000, a reduction of $592,000 from FY 1975. This reduction is calculated as follows:

Cost of permanent positions in 1975.....		$95,234
Cost Increases:.....		+2,397
Within grade advances and career development		
Full year effect of 1975 actions.....	+$544	
Partial year effect of 1976 actions.....	+499	
Full year effect of October 1974 pay raise....	+996	
Additional extra day.....	+358	

Cost Decreases:		- 2,989
Full year effect of 1975 manpower reduction....	-$2,313	
Turnover savings		
Full year effect of 1975 actions.....	-242	
Partial year effect of 1976 actions.....	-434	
Cost of permanent positions in FY 1976.....		$94,642

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Dollars in Thousands)				
b. Nonpermanent positions					
1. Cost	$1,209	$1,411	$1,662	$1,641	$608
2. Number of manyears	194	224	250	250	92

The 1976 plan includes 250 manyears, which will be used to support the following programs at approximately the levels indicated:

Program	Manyears
College cooperative training.....	108
Vocational cooperative training.....	25
Summer employment.....	20
Youth opportunity.....	76
Other temporary employment.....	21
Total.....	250

The 1975 current estimate is increased from the 1975 budget due to the October 1974 pay raise and an expanded summer and opportunity program with increased emphasis on minority and female hiring efforts. The reduction in the 1976 estimate is attributable to a greater demand for lower salaried clerical employees.

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	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
c. Reimbursable details.....	$87	$241	$36	$69	$18

Reimbursable detailees are assigned to NASA from DOD to support the Center in the field of solid rocket motors and earth resources. This effort provides mutual benefits to NASA and DOD by providing NASA with special talent and by keeping DOD personnel current on the manned space flight technology. The current estimate for 1975 is decreased from the 1975 budget estimate reflecting a reduction of requirements from 20 manyears to 2. The increase in 1976 is due to a full 3-manyear effort in 1976.

d. Overtime and other compensation.....	$545	$643	$595	$606	$151

The current estimate for 1975 is decreased from the 1975 budget estimate as a result of continuing emphasis on reducing overtime costs to the lowest level consistent with mission and statutory requirements. This cost reduction program at MSFC more than offsets a $24 increase due to the October 1974 pay raise. The increase in 1976 is due to the full effect of the October 1974 pay raise.

2. Benefits.....	$8,984	$9,805	$9,508	$8,538	$2,135

The distribution of these costs by major categories is as follows:

Category of Cost					
Contribution to the civil service retirement fund.....	$7,004	$6,631	$6,735	$6,694	$1,718
Contribution for employee life insurance.....	370	361	361	361	91
Contribution for employee health insurance.....	1,232	1,000	1,103	1,196	300
Contribution to FICA.....	21	32	24	25	5
Incentive awards	53	82	84	84	21
Severance pay...	304	1,699	1,201	178	---
Total.....	$8,984	$9,805	$9,508	$8,538	$2,135

The current estimate in 1975 decreased from the 1975 budget estimate due to the lower requirement for severance pay in 1975. This lower requirement was brought about by the success experienced in placing RIF'd employees in other jobs. On June 30, 1974, 108 employees were drawing severance pay, by December 30, 1974, only 31 remained eligible. The decreased requirements for severance pay more than offset the increased health insurance and retirement costs. The decrease in 1976 is due to reduced manyear levels and lower severance pay requirements. The decreased requirements for retirement partially offsets the full year cost of health insurance rate increases in 1976.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
B. Supporting Costs	$351	$400	$404	$404	$101
1. Transfer of personnel.....	119	120	120	120	30

The estimated costs (based on the number and the historical average cost of relocations) provide for certain relocation costs, such as the expenses of selling and buying a home and the movement of household goods. The average cost per move has increased from $3,871 in 1974 to an estimated $4,583 in 1976. Actual 1974 experience was 31 moves; in 1975 this decreases to 28. In 1976, 26 moves are estimated.

2. Personnel training.....	232	280	284	284	71

The personnel training costs are based on the continuation of current training programs and the need to reorient skills of employees into areas compatible with the direction of the space program in the 1970's and MSFC's role in the program. A prime objective is career development to permit employees to advance to more responsible positions and to provide the Center with highly motivated and experienced personnel not readily available in the labor market. The 1975 level remains essentially constant with a slight increase to reflect current training costs. The program for 1976 is planned at the 1975 level.

TRAVEL

II. TRAVEL.....	$1,916	$2,233	$1,962	$2,115	$556

Travel requirements include those for Space Shuttle, Apollo Soyuz Test Project, Spacelab, Space Tug, Large Space Telescope, Solar Electric Propulsion Stage, Concept Verification Testing, Laser Geodynamic Satellite, Environmental and Applications programs and scientific projects such as the High Energy Astronomy Observatory and a Sounding Rocket Space Probe.

The current estimate for 1975 is decreased from the 1975 budget estimate reflecting the recent legislation limiting federal travel expenses. The increase in 1976 reflects an adjustment of the 1975 level to take into account increased air tariffs.

Basis of Fund Requirements

Summary of Travel by Major Category

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
A. Program related travel.....	$1,646	$1,951	$1,821	$1,962	$495
B. Meetings and technical seminars.....	32	11	11	12	4
C. Administrative travel.....	238	271	130	141	57
Total, Travel....	$1,916	$2,233	$1,962	$2,115	$556

FACILITIES SERVICES

III. FACILITIES SERVICES.....	$9,215	$8,974	$9,415	$9,601	$3,143

Basis of Fund Requirements

Summary of Facilities Services

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
A. Maintenance and Related Services					
1. Maintenance, repair and alteration of buildings and grounds.....	$1,767	$1,508	$2,265	$2,055	$ 562
2. Custodial services.....	3,054	2,391	2,379	2,343	725
3. Maintenance of equipment....	499	719	540	564	158
Subtotal.....	$5,320	$4,618	$5,184	$4,962	$1,445
B. Operation of Facilities					
1. Utilities.....	$3,311	$3,702	$3,615	$4,013	$1,446
2. Supplies and equipment....	584	654	616	626	252
Subtotal.....	$3,895	$4,356	$4,231	$4,639	$1,698
Total, Facilities Services.....	$9,215	$8,974	$9,415	$9,601	$3,143
A. Maintenance and Related Services	$5,320	$4,618	$5,184	$4,962	$1,445
1. Maintenance, repair and alterations of buildings and grounds..	$1,767	$1,508	$2,265	$2,055	$562

These services are performed by the U.S. Army Missile Command (AMC) on a reimbursable basis and by the MSFC support services contractor personnel. Over four million square feet of space are involved, of which approximately 11 percent are Army buildings (of considerable age) used and maintained by MSFC. The grounds cover 1,841 acres of which 1,243 acres are improved and 598 acres are unimproved. Maintenance is accomplished by miscellaneous crafts, a mix of some forty building and construction trades.

The current estimate for 1975 is increased from the budget estimate to reflect the need for renovation and repair of the air conditioning systems, a cost not included in the initial 1975 estimate. The decrease of $210 in 1976 results from reduced maintenance, the full year impact of closing facilities and a decrease of 10 manyears in support contractor effort. The reductions based on these three factors are partially offset by wage and price escalation.

		1975			
	1974	Budget Estimate	Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
2. Custodial services....	$3,054	$2,391	$2,379	$2,343	$725

Custodial services are performed principally by support service contractor personnel and include janitorial services for some three million square feet of area in numerous buildings; security services that provide for badging of employees and visitors, maintaining security patrol and policing traffic (the U.S. Army provides perimeter patrol and entrance gate services for which MSFC is charged a pro-rata share); laundry services, comprising the cleaning and laundry of 77,800 pieces of material annually; movement and disposal of approximately 90,000 cubic yards of refuse annually at 132 different pickup points; and fire protection service furnished by the U.S. Army for some 2,553,000 square feet of area.

The decrease in 1976 is attributable to reduced custodial services as a result of the closing of facilities, partially offset by price and wage rate increases.

3. Maintenance of equipment.....	$499	$719	$540	$564	$158

The current estimate for 1975 is decreased from the 1975 budget estimate to reflect a greater savings being realized through retirement of certain items of equipment and the fact that maintenance costs are running below the amount initially planned. The increase in 1976 reflects price escalation partially offset by a further reduction in the number of equipment units to be maintained.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
B. Operation of Facilities.....	$3,895	$4,356	$4,231	$4,639	$1,698
1. Utilities....	$3,311	$3,702	$3,615	$4,013	$1,446

This item includes the cost of utility services furnished by the U.S. Army Missile Command on a reimbursable basis. Utility services include electricity, steam, water and sewage. Electricity, steam and water usage is metered to the Center. Sewage cost is pro-rated based on on-post population (per capita). The current estimate for 1975 decreased from the 1975 budget estimate to reflect a Center-wide conservation program. The increase in 1976 is attributed solely to cost escalation, approximately 16%, as consumption is expected to decrease as a result of decreased manpower levels. It is estimated that electricity consumption will decrease by 14%; steam, by 6%, and water, by 3%.

2. Supplies and equipment..	$584	$654	$616	$626	$252

The current estimate for 1975 is decreased from the 1975 budget estimate to reflect a deferral of purchases. In examining priorities, it was concluded that this action was necessary to help cover the unexpected air conditioning renovation costs.

TECHNICAL SERVICES

IV. TECHNICAL SERVICES..	$6,722	$6,884	$6,701	$6,919	$1,870

Basis of Fund Requirements

Summary of Technical Services

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
A. Automatic Data Processing					
1. Equipment....	$341	$510	$434	$338	$85
2. Programming and operation services...	4,292	4,429	4,093	4,330	1,163
Subtotal...	$4,633	$4,939	$4,527	$4,668	$1,248
B. Engineering Services.....	$87	$61	$154	$188	$47
C. Scientific and Technical Information and Education Programs					
1. Operation of Redstone scientific and information center.....	$809	$780	$858	$901	$224
2. Educational/ informational programs...	801	705	707	691	206
3. Scientific and technical information.	392	399	455	471	145
Subtotal....	$2,002	$1,884	$2,020	$2,063	$575
Total, Technical Services.....	$6,722	$6,884	$6,701	$6,919	$1,870

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
A. Automatic Data Processing.....	$4,633	$4,939	$4,527	$4,668	$1,248

This line item includes the cost of the support service contract for ADP operations, programming, and systems design. It also includes the cost of lease, maintenance and repair of ADP equipment.

The current estimate for 1975, which is below the 1975 budget estimate, reflects a reduction in programming and operation services, ADP purchases, and a corresponding decrease in support contractor manyears (from 278 to 265). The increase in the 1976 estimate is for higher wage rates; the manyear level decreases further to 261.

B. Engineering Services.....	$87	$61	$154	$188	$47

The current estimate for 1975 was increased from the 1975 budget estimate to reflect the implementation during FY 1975 of the Facility Utilization Study. The cost of this study had not been included in the 1975 budget estimate. The increase in the FY 1976 estimate is attributable to the full year cost of the Facility Utilization Study which will continue throughout the year.

C. Scientific and Technical Information and Educational Programs.....	$2,002	$1,884	$2,020	$2,063	$575

This subfunction covers the cost of the Center's share of the operation of the Redstone Scientific Information Center (RSIC), operated by the U.S. Army Missile Command, on a reimbursable basis and includes 198,000 books and journals, 2,800 periodicals and 400,000 technical papers. It also maintains approximately 1,150,000 documents on microfilm.

The current estimate for 1975 is an increase over the 1975 budget estimate to reflect the increased cost of motion picture supplies and equipment required by the scientific and technical information programs. In addition, the Army has assessed an additional cost on the center to partially absorb unexpected increased costs for RSIC operation.

566-539 O - 75 - 10

ADMINISTRATIVE SUPPORT

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
V. ADMINISTRATIVE SUPPORT.....	$7,159	$5,598	$5,799	$5,971	$1,653

Basis of Fund Requirements

Summary of Administrative Support

A. Communications					
1. Leased lines and long distance tolls.....	$597	$585	$611	$602	$162
2. Local telephone service....	725	805	828	775	193
3. Other communications....	108	127	130	128	35
Subtotal	$1,430	$1,517	$1,569	$1,505	$390
B. Administrative Printing.....	$298	$440	$347	$340	$85
C. Supplies, Materials and Equipment...	$912	$911	$1,001	$1,033	$366
D. Transportation					
1. Center operations.....	$1,930	$1,240	$1,316	$1,448	$385
2. Common carrier	37	46	35	35	9
Subtotal	$1,967	$1,286	$1,351	$1,483	$394

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
E. Administrative Support Services					
1. Installation support services...	$2,140	$1,046	$1,135	$1,194	$318
2. Occupational medicine and environmental health.....	412	398	396	416	100
Subtotal...	$2,552	$1,444	$1,531	$1,610	$418
Total, Administrative Support.....	$7,159	$5,598	$5,799	$5,971	$1,653
A. Communications...	$1,430	$1,517	$1,569	$1,505	$390

In 1974, there was a major reorganization at MSFC resulting in laboratory, office and personnel realignments. As a direct result, the current estimate for 1975 is increased over the 1975 budget estimate to account for rate increases in maintenance, installation, and relocation of telephone instruments. The decrease in 1976 is a result of decreased manpower levels, partially offset by the costs incurred in relocating telephones.

B. Administrative Printing.....	$298	$440	$347	$340	$85

The current estimate for 1975 is decreased from the budget estimate to reflect concerted economy measures directed toward eliminating nonessential printing requirements, purging distribution lists, and terminating obsolete reports. The decrease in 1976 is the full year savings of the economy measures taken in 1975.

C. Supplies Materials and Equipment....	$912	$911	$1,001	$1,033	$366

The current estimate for 1975 is increased over the budget estimate to reflect increased costs of fuels and lubricants. The increase in 1976 is due to price escalation partially offset by savings due to reduced personnel levels and reduced vehicle maintenance levels.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
D. Transportation...	$1,967	$1,286	$1,351	$1,483	$394

The current estimate for 1975 is increased over the 1975 budget estimate to account for wage and price escalation within the support contract which services the MSFC motor pool. The increase in 1976 includes the full year effect of wage and price increases and the funds to accomplish scheduled maintenance on the NASA #3 aircraft.

E. Administrative Support Services.....	$2,552	$1,444	$1,531	$1,610	$418

The increases shown, both in the 1975 current estimate and in 1976, are attributable entirely to price and wage rate increases.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

GEORGE C. MARSHALL SPACE FLIGHT CENTER

JANUARY 10, 1975

MSFC SUMMARY

	FY-75	FY-76
EXCEPTED	54	54
GS-18	15	15
GS-16	287	287
GS-14	807	807
ALL OTHER GS	3135	3138
WAGEBOARD	15	15
TOTAL PERMANENT	4113	4113

OFFICE OF DIRECTOR

	FY-75	FY-76
EXCEPTED	3	3
GS-18	0	0
GS-16	2	2
GS-15	0	0
GS-14	8	8
ALL OTHER GS	0	0
WAGEBOARD	13	13
TOTAL PERMANENT		

ASSOCIATE DIRECTOR FOR SCIENCE

	FY-75	FY-76
EXCEPTED	1	1
GS-18	0	0
GS-16	2	2
GS-15	0	0
GS-14	3	3
ALL OTHER GS	0	0
WAGEBOARD	6	6
TOTAL PERMANENT		

SAFETY & MANNED FLIGHT AWARENESS OFFICE

	FY-75	FY-76
EXCEPTED	0	0
GS-18	0	0
GS-16	5	5
GS-15	1	1
GS-14	13	13
ALL OTHER GS	0	0
WAGEBOARD	19	19
TOTAL PERMANENT		

PUBLIC AFFAIRS OFFICE

	FY-75	FY-76
EXCEPTED	0	0
GS-18	0	0
GS-16	0	0
GS-15	1	1
GS-14	17	17
ALL OTHER GS	0	0
WAGEBOARD	18	18
TOTAL PERMANENT		

CHIEF COUNSEL

	FY-75	FY-76
EXCEPTED	1	1
GS-18	0	0
GS-16	2	2
GS-15	5	5
GS-14	8	8
ALL OTHER GS	0	0
WAGEBOARD	16	16
TOTAL PERMANENT		

CENTER PLANS AND RESOURCES CONTROL OFFICE

	FY-75	FY-76
EXCEPTED	0	0
GS-18	0	0
GS-16	3	3
GS-15	9	9
GS-14	44	44
ALL OTHER GS	0	0
WAGEBOARD	56	56
TOTAL PERMANENT		

EQUAL OPPORTUNITY OFFICE

	FY-75	FY-76
EXCEPTED	0	0
GS-18	0	0
GS-16	1	1
GS-15	2	2
GS-14	8	8
ALL OTHER GS	0	0
WAGEBOARD	11	11
TOTAL PERMANENT		

SHUTTLE PROJECTS OFFICE

	FY-75	FY-76
EXCEPTED	5	5
GS-18	1	1
GS-15	16	16
GS-14	38	38
ALL OTHER GS	151	151
WAGEBOARD	0	0
TOTAL PERMANENT	211	211

MICHOUD ASSEMBLY FACILITY

	FY-75	FY-76
EXCEPTED	0	0
GS-18	0	0
GS-15	6	6
GS-14	6	6
ALL OTHER GS	27	27
WAGEBOARD	0	0
TOTAL PERMANENT	39	39

SPACELAB PROGRAM OFFICE

	FY-75	FY-76
EXCEPTED	2	2
GS-18	0	0
GS-16	4	4
GS-15	10	10
GS-14	29	29
ALL OTHER GS	0	0
WAGEBOARD	45	45
TOTAL PERMANENT		

SATURN PROGRAM OFFICE

	FY-75	FY-76
EXCEPTED	0	0
GS-18	0	0
GS-16	10	0
GS-15	13	0
GS-14	45	0
ALL OTHER GS	0	0
WAGEBOARD	68	0
TOTAL PERMANENT		

SPACE SCIENCE PROJECTS OFFICE

	FY-75	FY-76
EXCEPTED	1	1
GS-18	1	1
GS-16	8	8
GS-15	16	16
GS-14	36	36
ALL OTHER GS	0	0
WAGEBOARD	62	62
TOTAL PERMANENT		

PROGRAM DEVELOPMENT

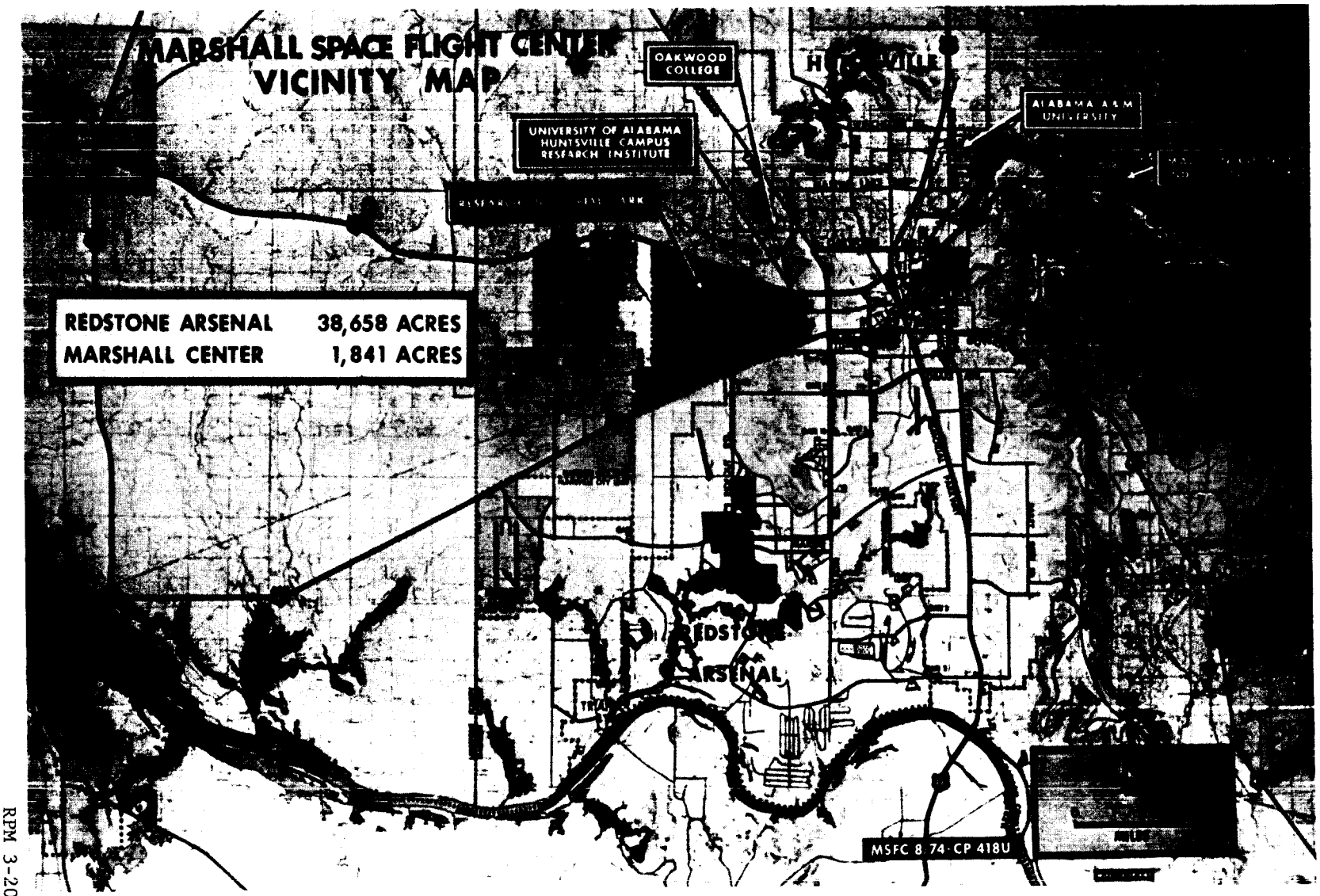
	FY-75	FY-76
EXCEPTED	7	7
GS-18	3	3
GS-16	36	36
GS-15	50	50
GS-14	192	192
ALL OTHER GS	0	0
WAGEBOARD	296	296
TOTAL PERMANENT		

SCIENCE AND ENGINEERING

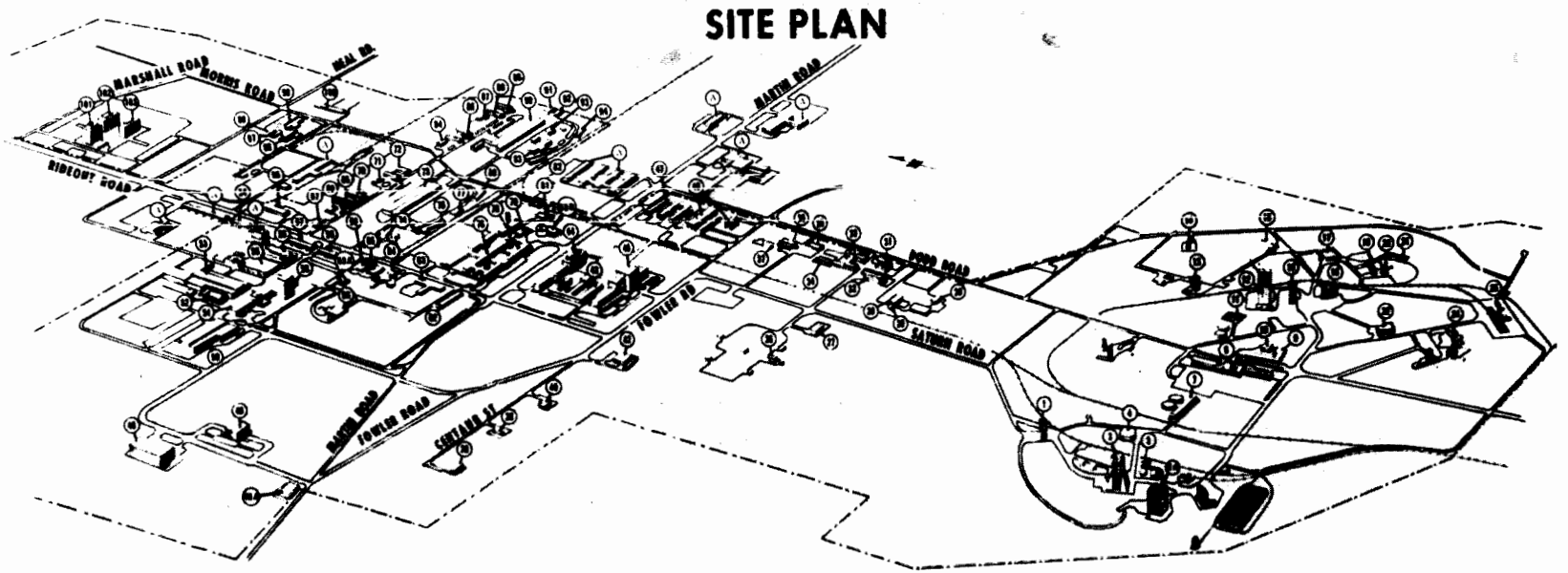
	FY-75	FY-76
EXCEPTED	30	30
GS-18	10	10
GS-16	171	181
GS-15	390	393
GS-14	1786	1831
ALL OTHER GS	3	3
WAGEBOARD	2390	2448
TOTAL PERMANENT		

ADMINISTRATION & PROGRAM SUPPORT

	FY-75	FY-76
EXCEPTED	4	4
GS-18	0	0
GS-16	22	22
GS-15	67	67
GS-14	768	768
ALL OTHER GS	12	12
WAGEBOARD	873	873
TOTAL PERMANENT		


MARSHALL SPACE FLIGHT CENTER
VICINITY MAP
OAKWOOD COLLEGE
UNIVERSITY OF ALABAMA HUNTSVILLE CAMPUS RESEARCH INSTITUTE
ALABAMA A&M UNIVERSITY
REDSTONE ARSENAL 38,658 ACRES
MARSHALL CENTER 1,841 ACRES
REDSTONE ARSENAL
MSFC 8-74-CP 418U

MARSHALL SPACE FLIGHT CENTER
SITE PLAN



HEADQUARTERS AREA

[illegible]	42[illegible]	CENTRAL COMMUNICATIONS FACILITY
95	4241	STORAGE BUILDING
77	S-4244	OUTLER BUILDING (STORAGE AND SHOPS)
78	S-4251	SUPPORT SERVICES EQUIPMENT SHED
79	4250	TECHNICAL SERVICES OPERATIONS BUILDING
80	4247	SUPPORT SERVICES OPERATIONS AND MEDICAL CENTER
81	4255	CENTRAL LABORATORY AND OFFICE BUILDING
82	4252	PROJECT ENGINEERING BUILDING
83	4251	ENGINEERING AND ADMINISTRATION BUILDING

LAB AND SUPPORT AREA

33	4329	LOW TEMPERATURE TEST FACILITY
39	4422	LIQUID HYDROGEN TEST PAD
[illegible]	4423	ACCELERATOR AND TEST CELL FACILITY
42	4605	NON-DESTRUCTIVE TEST LABORATORY
43	4612	MATERIALS LABORATORY
44	4610	ENGINEERING & OFFICE BLDG.
45	4619	STRUCTURES AND MECHANICS LABORATORY
46	4650	TEST SHOP & INSTRUMENT LAB
47	4663	HUNTSVILLE COMPUTER COMPLEX
48	S-4755	VEHICLE COMPONENTS HANGAR
49	S-4752	COMPONENTS AND SUBASSEMBLY ACCEPTANCE BLDG.
49A		INDUSTRIAL WASTE TREATMENT FACILITY
50	4708	ASSEMBLY AND INSPECTION HANGAR
51	4760	SURFACE TREATMENT FACILITY
52	S-4706	NEUTRAL BUOYANCY SIMULATOR
53	4705	ASSEMBLY SHOP AND HANGAR
53A	4775	EXPERIMENTAL TEST FACILITY
53B	4467	CELESTIAL SENSOR FACILITY
54	4723	MATERIAL TEST LABORATORY
55	4711	PRECISION MACHINE SHOP
56	4712	FIELD OFFICE BUILDING
57	4727	MACHINE SHOP AND OFFICE BUILDING
58	4728	EQUIPMENT TEST SHOP
59	4707	COMPONENT HANGER & HYDROSTATIC TEST
62	S-4747	AIR COMPRESSOR STATION
63	4746	OFFICE, TEST DIVISION
64	4741	BERYLLIUM FACILITY
65	4732	WIND TUNNEL FACILITY
66	4733	VACUUM TANK FACILITY
67	4306	SUPPORT OFFICES
68	4312	OFFICE BUILDING
69	4311	SHOCK TUNNEL FACILITY
70	4313	STRUCTURAL TESTING LABORATORY STORAGE
71	4332	ENVIRONMENTAL TEST LABORATORY
72	4331	TESTING AND DEVELOPMENT SHOP
73	4471	STORAGE AND OFFICE BUILDING
74	4485	FINANCIAL MANAGEMENT OFFICE BUILDING
75	4491	COMPUTATION/ADP LABORATORY
76	4487	ELECTRONICS & CONTROL BLDG.
77	S-4479	STORAGE SHED
78	4476	ACCELERATION AND ENVIRONMENTAL TEST FACILITY
79	S-4436	AUTOMATION CHECKOUT BUILDING
80	4492	ELECTRICAL SYSTEM LABORATORY
81	4475	HAZARDOUS OPERATIONS LABORATORY
82	4493	MACHINE AND SHEET METAL SHOP
83	4483	VEHICLE MAINTENANCE SHOP
84	4362	NITROGEN STORAGE BUILDING
86	4363	PHOTOGRAPHIC LABORATORY
87	4372	MILLIMETER WAVELENGTH FAC.
88	4371	STORAGE AND OFFICES
89	4373	GSE LABORATORY
90	4481	ENGINEERING AND MACHINE SHOP/OFFICE
91	S-4498	STORAGE BUILDING (QUONSET)
92	S-4499	STORAGE BUILDING (QUONSET)
93	4482	OPERATIONS SUPPORT BUILDING
94	4494	MARS ACTIVITIES

TEST AREA

WEST AREA

1	4670	F-1 ENGINE TEST STAND
2	4671	SATURN STATIC TEST STAND (S-IC)
3	[illegible]	HELIUM COMPRESSOR BUILDING
4	4674	CONTROL CENTER BUILDING
7	4667	PUMP HOUSE
8	4666	TEST DIVISION ENGINEERING BUILDING
8A	4699	S-II STRUCTURAL TEST STAND

EAST AREA

9	4669	TECHNICAL DOCUMENTATION CENTER
10	4667	BOILER HOUSE AND PUMP STATION
11	S-4649	DEIONIZED WATER TREATMENT PLANT
12	4550	ADVANCED SATURN DYNAMIC TEST STAND
13	4522	TEST STAND (LOX-LH_2 COMPONENTS)
14	4530	TEST STAND (LOX-RP COMPONENTS)
15	4561	CONTROL AND SERVICE CENTER
16	4557	DYNAMIC TEST STAND (SATURN I/IB)
17	4523	COMPONENTS TEST LABORATORY
18	4548	ALTITUDE TEST FACILITY
19	S-4539	TEST PREPARATION BUILDING
20	4540	ACOUSTIC MODEL TEST FACILITY
21	4541	CONTROL BUILDING
22	4570	BLOCKHOUSE
24	4514	LIQUID HYDROGEN FACILITY (S-IVB)
25	4572	STATIC TEST TOWER (S-I/IB)

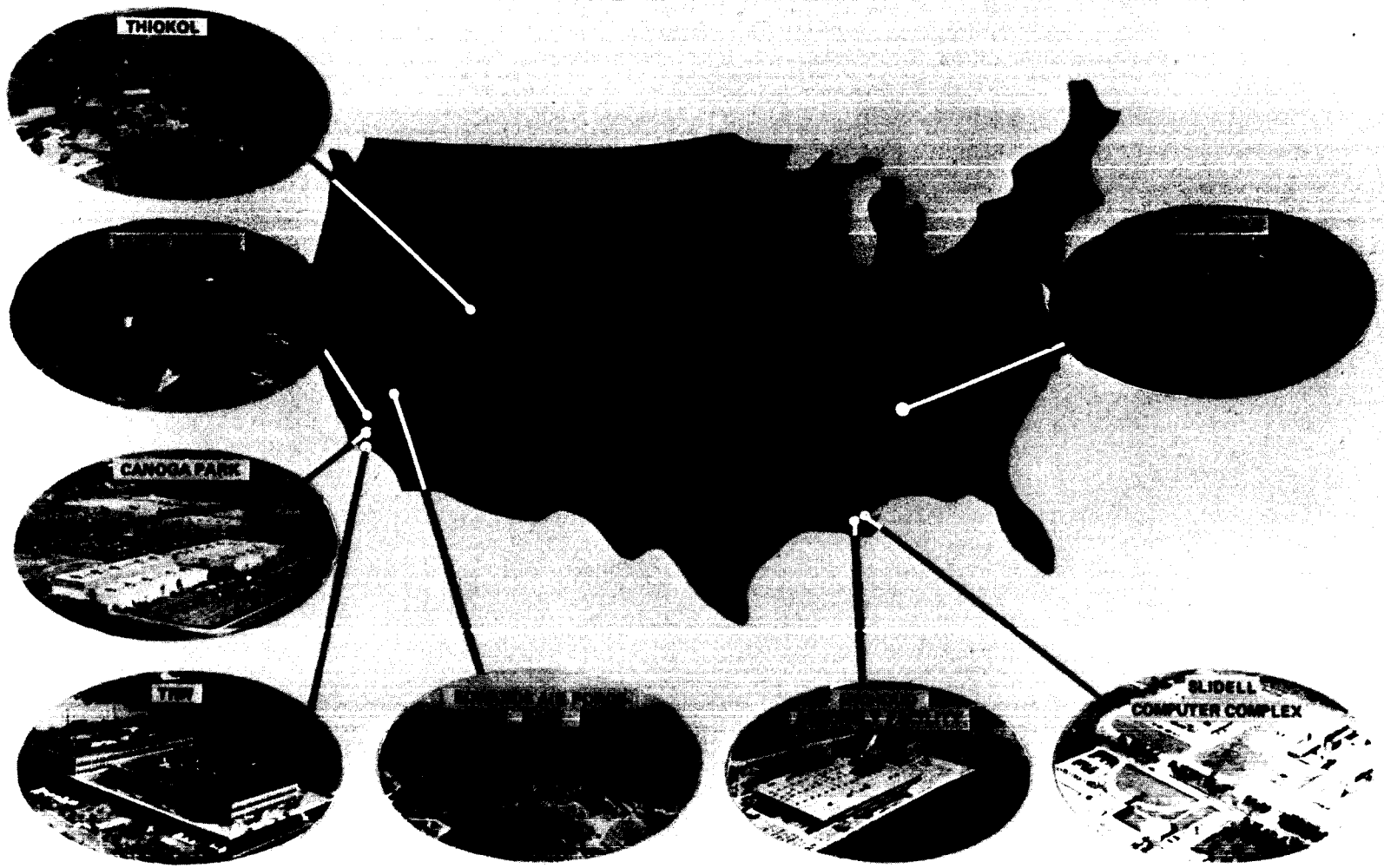
TEST SUPPORT AREA

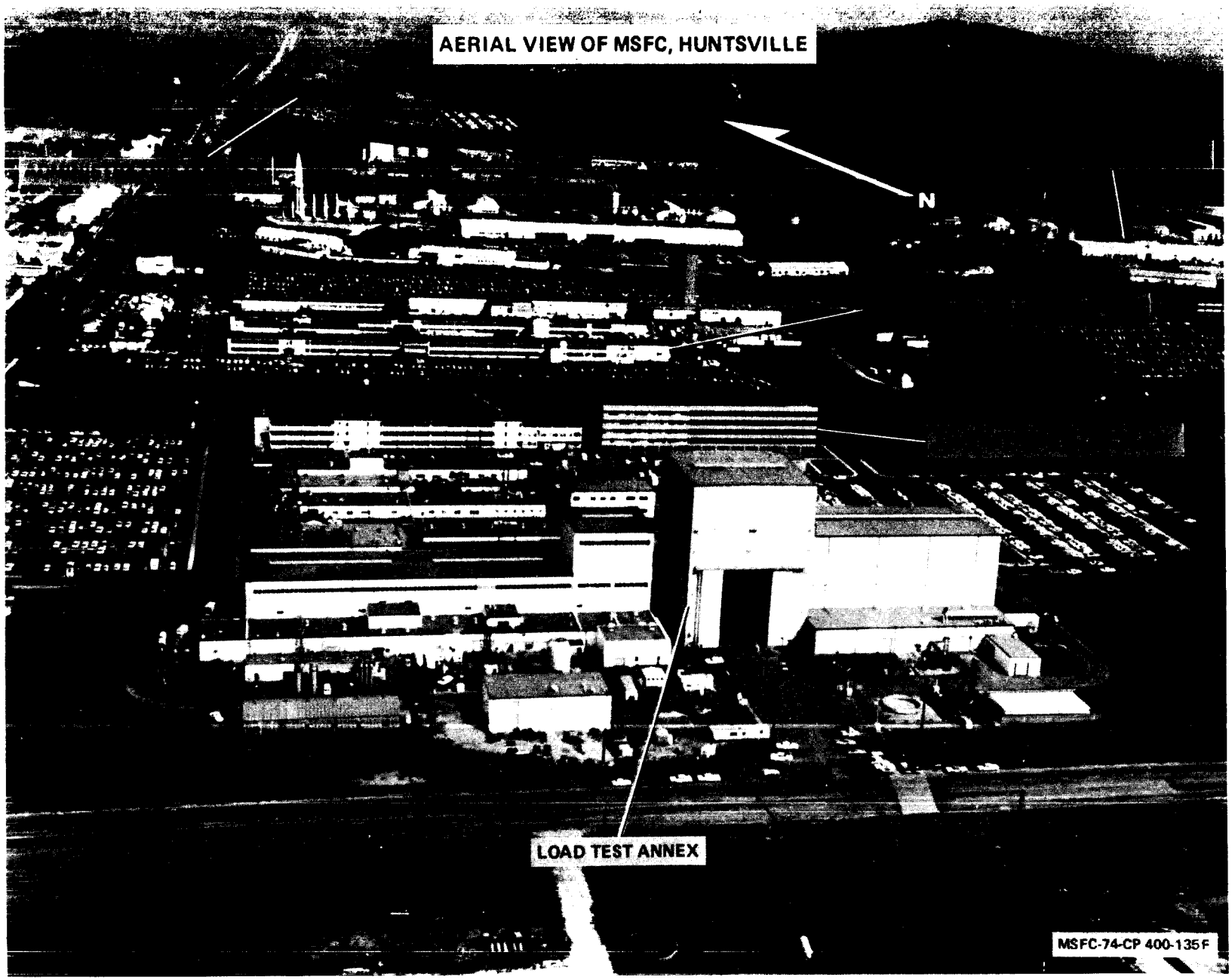
26	4646	GSE TEST CONTROL CENTER
27	4648	HIGH PRESSURE FLUID TEST FACILITY
28	S-4659	SUPPORT BUILDING (N2 VAPORIZATION FAC)
29	S-4[illegible]	BOILER HOUSE
30	S-4[illegible]	GAS STORAGE & COMPRESSOR BLDG
31	S-4655	ENGINE PREPARATION BUILDING
32	S-4656	SATURN V GSE ASSEMBLY BUILDING
33	S-4653	COMPONENTS SUPPORT BUILDING
34	4678	SUB-STORES BUILDING
35	S-4654	TECHNICAL SYSTEMS WAREHOUSE
36	S-4651	SHOP BUILDING (QUONSET)
37	4649	TRANSPORTATION HANGER
		A[illegible] ARMY BUILDINGS

MSFC-12774-CP 435

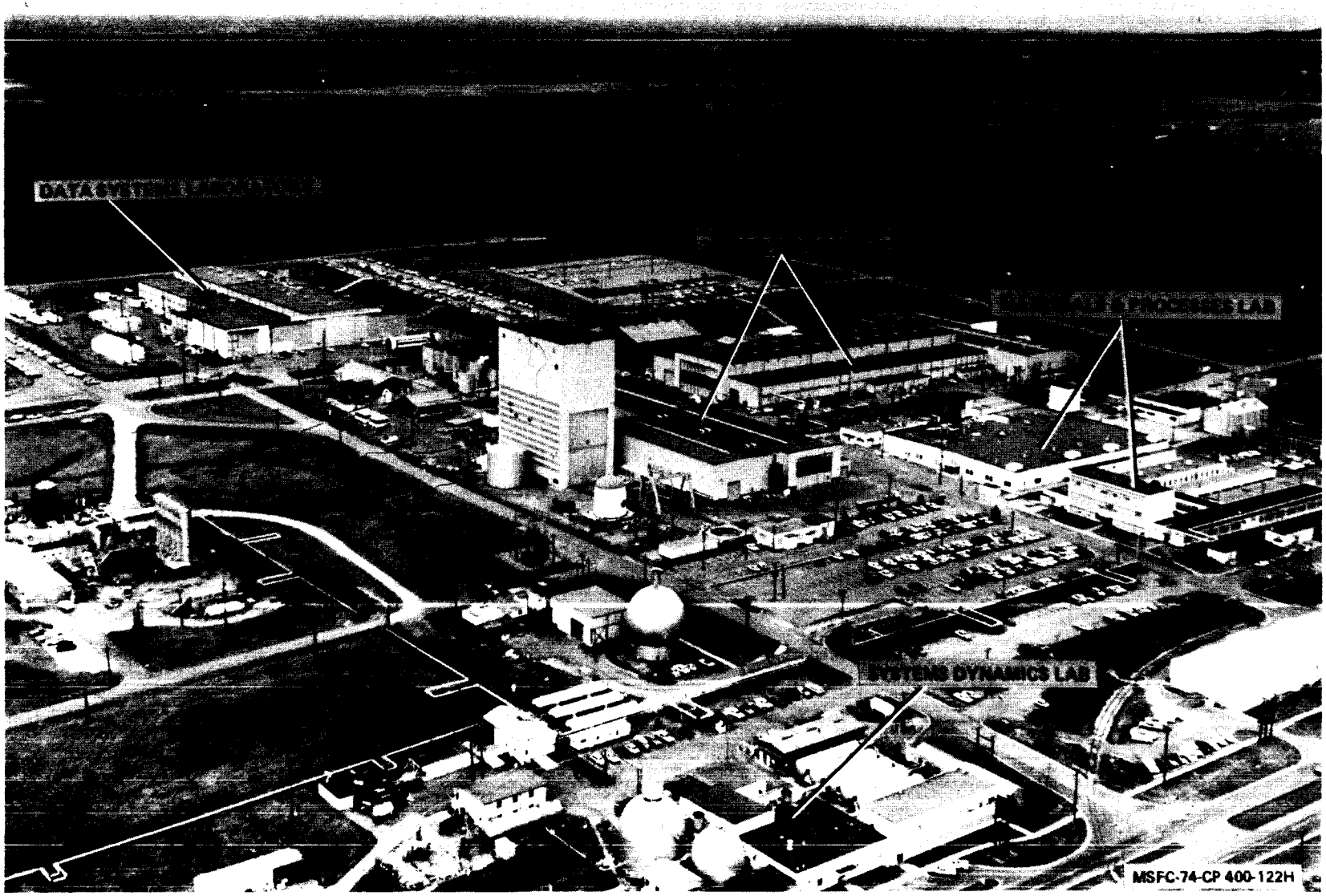
[redacted]

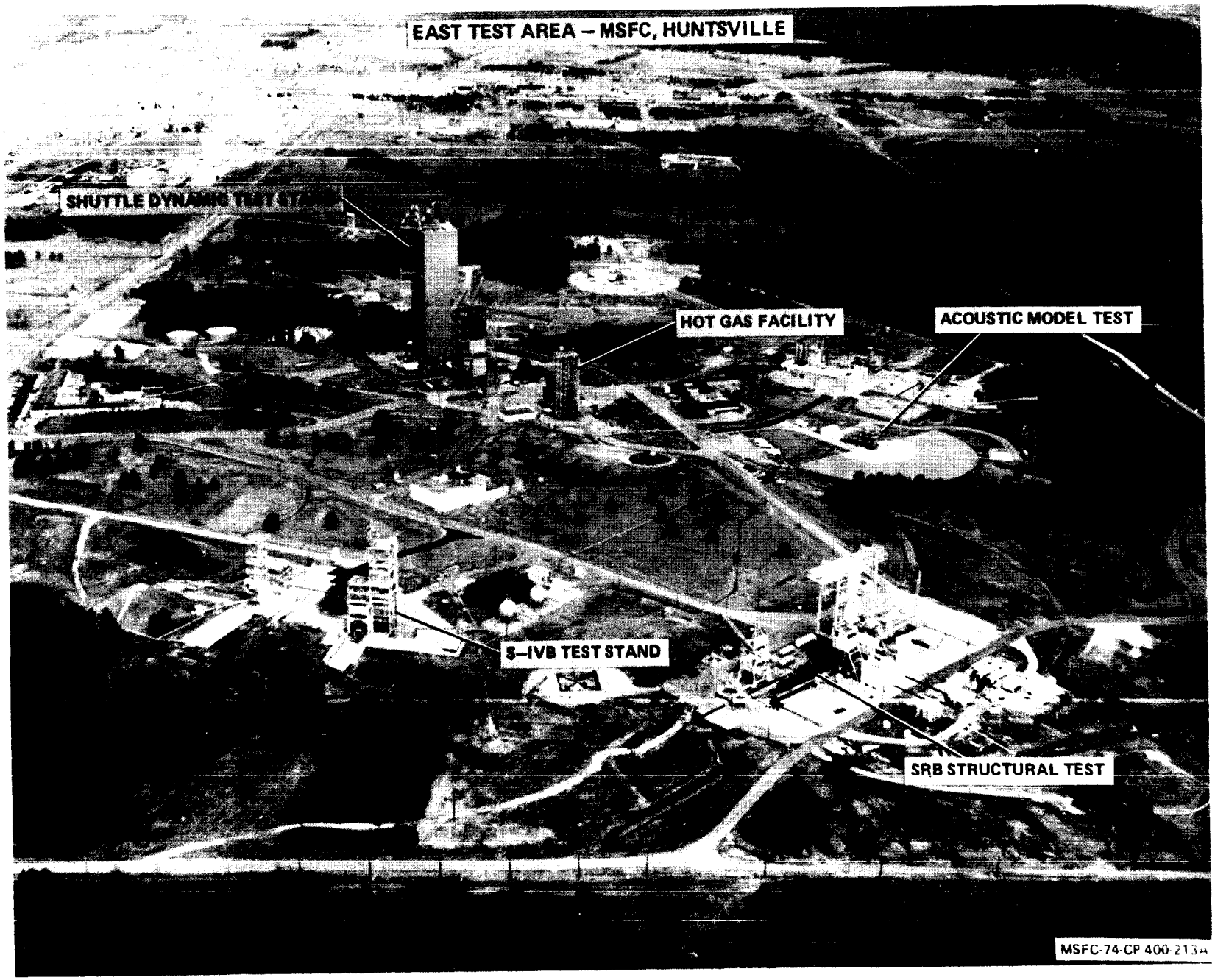
PROGRAM FACILITIES




AERIAL VIEW OF MSFC, HUNTSVILLE
N
LOAD TEST ANNEX
MSFC-74-CP 400-135F

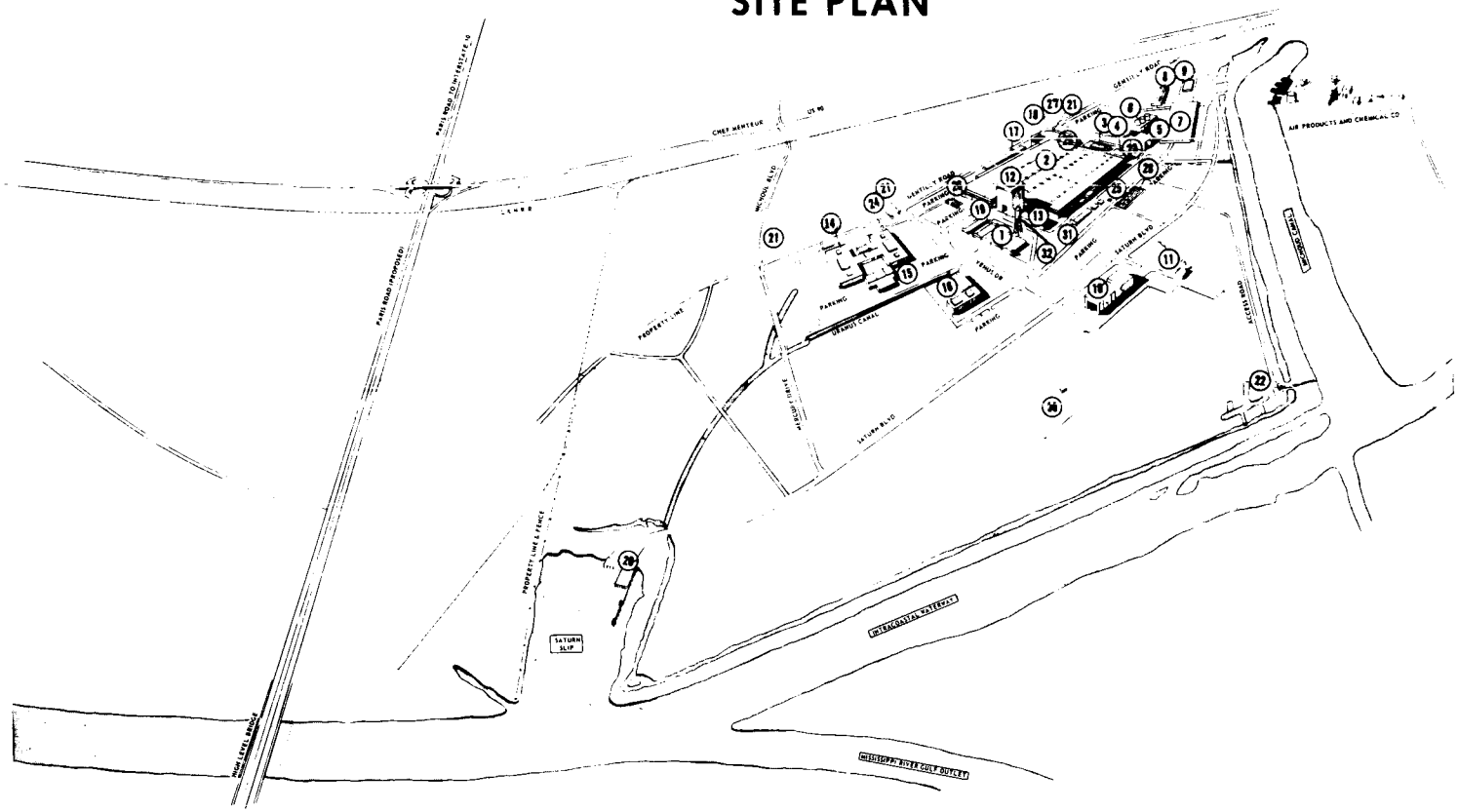
SCIENCE & ENGINEERING AREA – MSFC, HUNTSVILLE




EAST TEST AREA – MSFC, HUNTSVILLE
SHUTTLE DYNAMIC TEST STAND
HOT GAS FACILITY
ACOUSTIC MODEL TEST
S–IVB TEST STAND
SRB STRUCTURAL TEST
MSFC-74-CP 400-213A

MICHOUD ASSEMBLY FACILITY

SITE PLAN



MANUFACTURING AND ASSEMBLY

1	303	HANGAR
2	103	MANUFACTURING
3	111	LABORATORY
4	104	BATTERY CHARGING & STORAGE
5	207	BOILER HOUSE
6	202	COOLING TOWER
7	220	COMPONENT SUPPLY
8	203	MAINTENANCE SUPPLY
9	221	HAZARDOUS MATERIAL STORAGE

TEST FACILITIES

10	420	TEST & CHECKOUT FACILITY
11	404	HIGH PRESSURE TEST FACILITY
12	110	VERTICAL ASSEMBLY & HYDROSTATIC TEST
13	130	SYSTEMS ENGINEERING

ENGINEERING & ADMINISTRATION

14	350	OFFICE AND ENGINEERING BUILDING
15	351	CAFETERIA
16	320	CONTRACTOR SERVICES BUILDING
17	101	ADMINISTRATION
18	102	ENGINEERING
19	301	MAINTENANCE SHOP

TRANSPORTATION, UTILITIES & MISC

20	480	BARGE DOCK
21		GUARD HOUSE
22	450	MAIN PUMP STATION
23	201	PUMP STATION NO 1
24	304	PUMP STATION NO 3
25	143	PUMP STATION NO 4
26	308	WEST MASTER SUBSTATION
27	121	MAIN SUBSTATION
28		CHEMICAL WASTE LAGOON
29	119	PAINT SHOP
30	403	SALVAGE YARD
31	105	TRANSPORTATION
32		ELEVATED WATER TOWER

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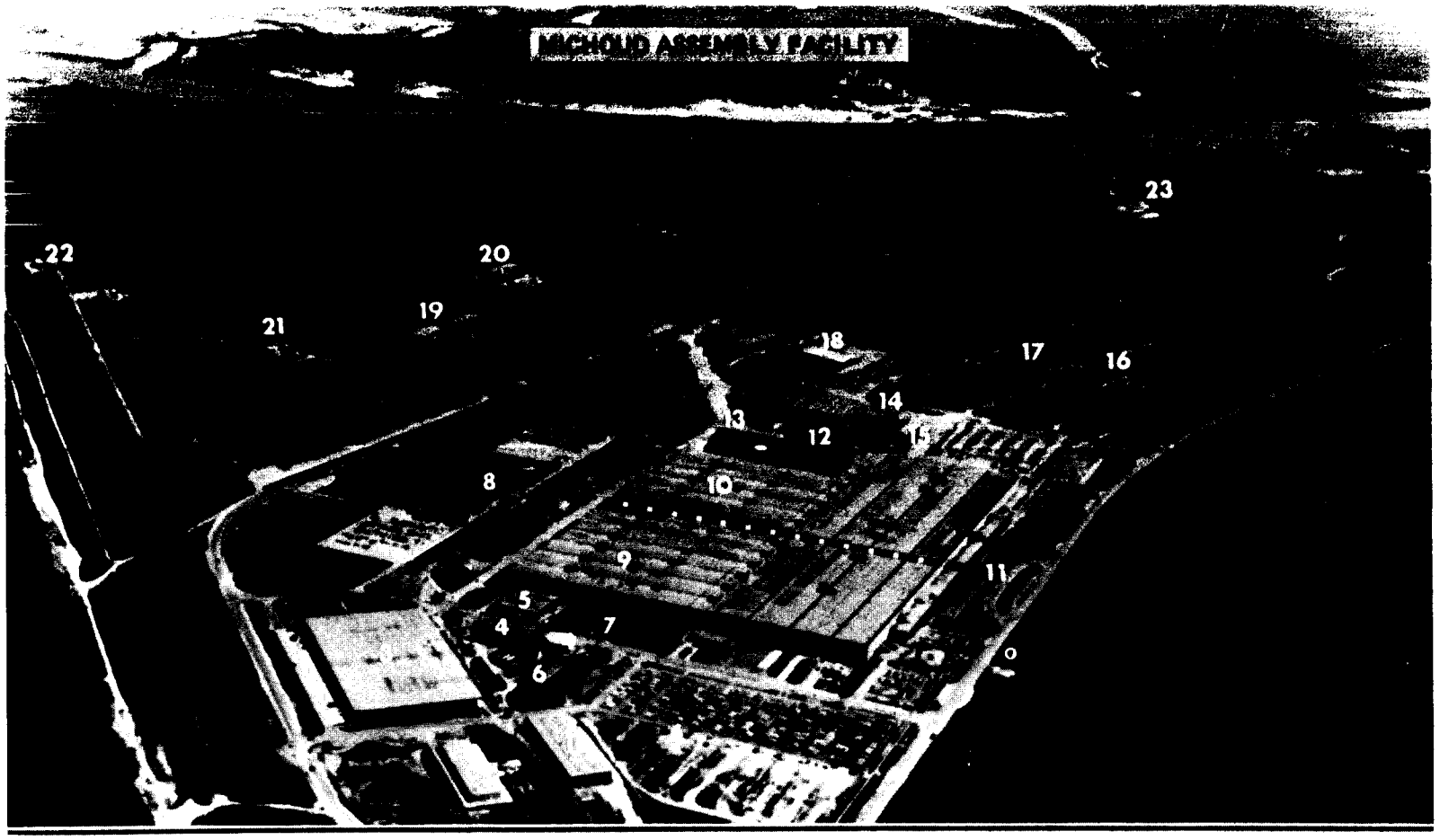

1. MAINTENANCE SUPPLY
2. HAZARDOUS MATLS STORAGE
3. COMPONENT SUPPLY
4. BOILER PLANT & FUEL TANKS
5. BATTERY CHARGING
6. COOLING TOWER
7. LABORATORY
8. CHEMICAL WASTE RESERVOIR
9. FAB AREA
10. FAB AREA
11. ENGINEERING BUILDINGS
12. VERT ASSY & HYDROSTATIC TEST
13. SYSTEMS ENGINEERING BLDG.
14. HANGAR
15. MAINTENANCE
16. ENGINEERING & OFFICE BLDG.
17. CAFETERIA
18. CONTRACTOR SERVICES BLDG.
19. TEST & CHECK OUT
20. SALVAGE YARD
21. HIGH PRESSURE TEST FACILITY
22. MAIN PUMPING STATION
23. BARGE DOCK

MSFC-74-CP-8904G

RESEARCH AND PROGRAM MANAGEMENT

FISCAL YEAR 1976 ESTIMATES

NATIONAL SPACE TECHNOLOGY LABORATORIES

DESCRIPTION

The National Space Technology Laboratories is located in southwest Mississippi, approximately 50 miles northeast of New Orleans, Louisiana. Total land area is 138,807 acres of which 13,480 acres make up the actual installation owned by NASA. The remaining 125,327 acres are held as a buffer zone. In the buffer zone, 7,490 acres are owned by NASA, and 117,837 acres are under restrictive easements. Capital investment for the National Space Technology Laboratories as of June 30, 1974, was approximately $322,902,000. The installation has deepwater access via the Pearl River and the Intracoastal Waterway.

MISSION

The National Space Technology Laboratories (NSTL), formerly the Mississippi Test Facility (MTF), was constructed and operated during the Sixties for acceptance testing of the booster stages of the Saturn V rocket system. The redesignation by NASA of MTF to the new NSTL in June 1974 recognized the emerging role of the installation in space and environmental technology efforts. In addition, NSTL is the prime static test facility for large liquid propellant rocket engines.

The National Space Technology Laboratories will be the site for static testing of the Space Shuttle Main Engine and the Main Propulsion Test Article. In addition to providing Shuttle support, NSTL provides services and facilities for other collocated government agencies engaged in the application of space technology. These include the Department of Interior, the Department of Commerce, the Environmental Protection Agency, the Department of Transportation, the Department of Defense, the State of Mississippi, the State of Louisiana, and the Earth Resources Laboratory, collocated from the Johnson Space Center.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

Functions	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
I. Personnel and Related Costs.....	$1,532	$1,474	$1,650	$1,672	$418
II. Travel.....	24	23	23	24	5
Total, fund requirements.....	$1,556	$1,497	$1,673	$1,696	$423

Distribution of Permanent Postions by Program

The following table summarizes the actual and planned utilization of positions for direct program activity and for indirect support.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Dollars in Thousands)			
Indirect Positions					
Director and staff.....	4	4	4	4	4
Administrative support....	39	39	42	42	42
Research and development support.....	22	22	24	24	24
Total, permanent positions.....	65	65	70	70	70

PERSONNEL AND RELATED COSTS

I. PERSONNEL AND RELATED COSTS.....	$1,532	$1,474	$1,650	$1,672	$418

Basis of Fund Requirements

A. Compensation and Benefits:					
1. Compensation:					
a. Permanent positions....	$1,394	$1,336	$1,493	$1,514	$378
b. Nonpermanent positions....	13	13	16	16	4
c. Overtime and other compensation.....	3	6	6	6	2
Subtotal, Compensation....	$1,410	$1,355	$1,515	$1,536	$384

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
2. Benefits:	$122	$119	$135	$136	$34
Subtotal, Compensation and Benefits.....	$1,532	$1,474	$1,650	$1,672	$418
Total, Personnel and Related Costs.....	$1,532	$1,474	$1,650	$1,672	$418
1. Compensation.....	$1,410	$1,355	$1,515	$1,536	$378
a. Permanent positions	$1,394	$1,336	$1,493	$1,514	$378

The current estimate for 1975 increased from the 1975 budget estimate due to the October 1974 pay raise and an increase of five permanent positions. These positions are required to support the increased activity associated with establishing NSTL as a NASA field installation. The increase in 1976 reflects the normal impact of promotions and within grade advances, the addition of new positions and the abolishment of existing ones, and the full year cost of the October 1974 pay raise.

Basis of Cost for Permanent Positions

In 1976 the cost of permanent positions will be $1,514 an increase of $21 from 1975. The increase is calculated as follows:

Cost of permanent positions in 1975.....		$1,493
Cost increases in 1976.....		+62
Within grade advances and career development		
Full year effect of 1975 actions.....	+$8	
Partial year effect of 1976 actions.....	+7	
Full year effect of 1975 new positions.....	+17	
Full year effect of October 1974 pay raise.....	+24	
Extra day.....	+6	
Cost decreases in 1976.....		-41
Turnover savings		
Full year effect of 1975 actions.....	-$33	
Partial year effect of 1976 actions.....	-8	
Cost of permanent positions in 1976.....		$1,514

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Dollars in Thousands)			
b. Nonpermanent Positions					
1. Cost.....	$13	$13	$16	$16	$5
2. Manyears.....	2	2	2	2	---

The 1976 estimate will support 2 manyears for the College Cooperative Training Program.

The current estimate for 1975 is increased from the 1975 budget estimate as a result of two career development promotions not provided for in the 1975 budget. In addition, the current estimate includes the cost of the October 1974 pay raise. The 1976 estimate continues at the 1975 level.

c. Overtime and other compensation...	$3	$6	$6	$6	$2

The 1976 funds cover overtime only and are necessary to meet management and other administrative requirements in areas such as procurement and financial management.

2. Benefits.....	$122	$119	$135	$136	$34

The following table indicates the costs of Personnel Benefits by the major categories:

Category of Cost					
Contribution to Civil Service Retirement Fund.....	$99	$95	$106	$107	$27
Contribution for employee life insurance.....	5	4	6	6	2
Contribution for employee health insurance.....	18	18	22	22	5
Incentive awards....	---	2	1	1	---
Total.....	$122	$119	$135	$136	$34

The current estimate for 1975 is increased from the 1975 budget estimate as a result of the five additional positions and the October 1974 pay raise.

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TRAVEL

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
II. TRAVEL.....	$24,000	$23,000	$23,000	$24,000	$5,000

Travel requirements are associated with the operation and maintenance of the facility, committee assignments, management meetings, project support to other NASA centers, and administrative matters such as legal, contracting, finance and resources management. The increase in 1976 reflects an adjustment to the 1975 level to take into account increased air fares.

Basis of Fund Requirements

Summary of Travel by Major Category

A. Administrative travel.....	$24,000	$23,000	$23,000	$24,000	$5,000
Total Travel.....	$24,000	$23,000	$23,000	$24,000	$5,000

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
NATIONAL SPACE TECHNOLOGY LABORATORIES
JANUARY 7, 1975

NSTL SUMMARY

	FY 75	FY 76
EXCEPTED	1	1
GS 16	1	1
GS 15	2	2
GS 14	10	10
ALL OTHER GS	56	56
TOTAL PERMANENT	70	70

OFFICE OF THE MANAGER

	FY 75	FY 76
EXCEPTED	1	1
GS 15	1	1
ALL OTHER GS	2	2
TOTAL PERMANENT	4	4

FINANCIAL MGMT. OFFICE

	FY 75	FY 76
GS 14	1	1
ALL OTHER GS	10	10
TOTAL PERM.	11	11

CONTRACTS OFFICE

	FY 75	FY 76
GS 14	1	1
ALL OTHER GS	11	11
TOTAL PERM.	12	12

CHIEF COUNSEL

	FY 75	FY 76
GS 14	1	1
ALL OTHER GS	1	1
TOTAL PERM.	2	2

RESOURCES MGMT. OFFICE

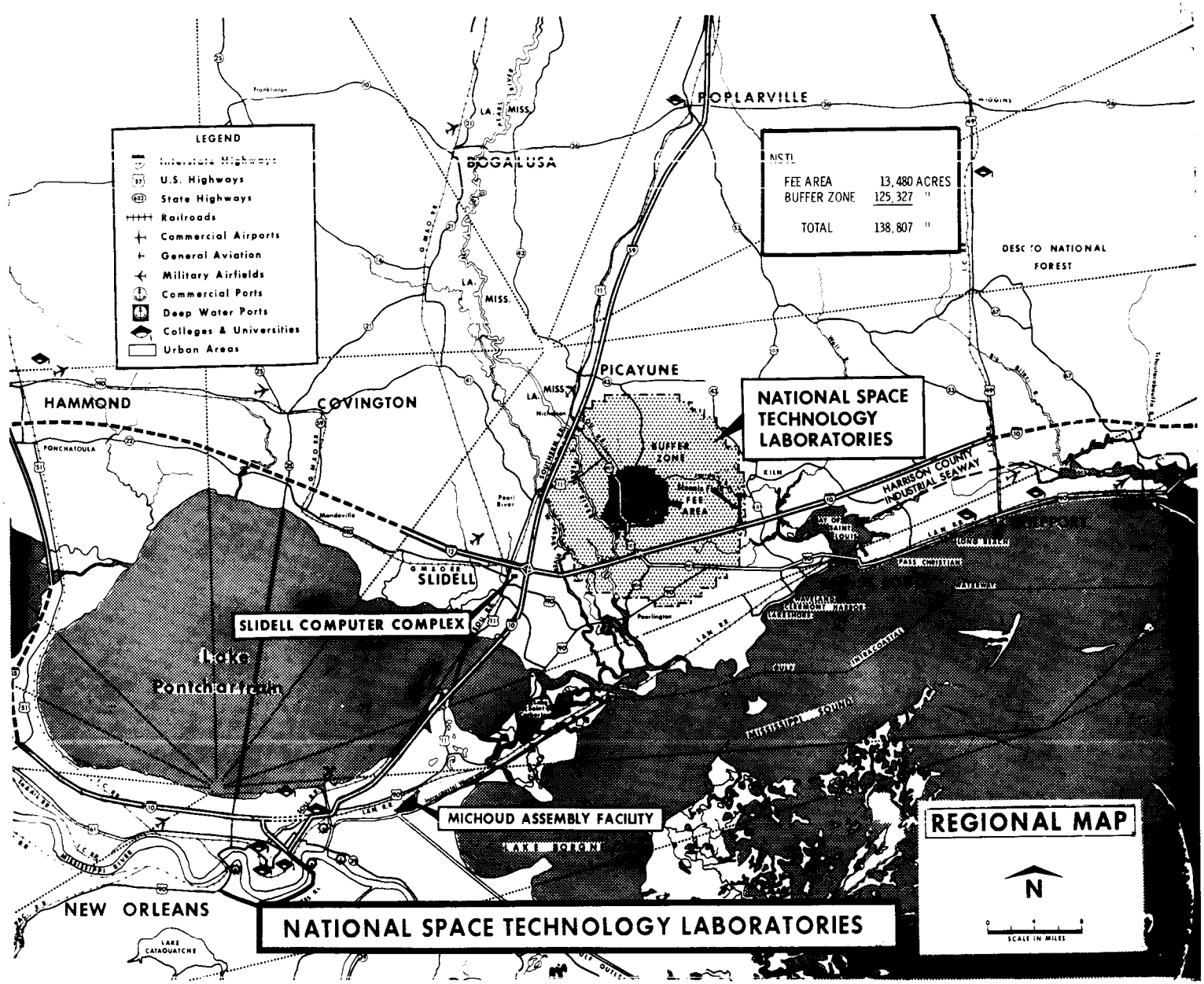
	FY 75	FY 76
GS 14	1	1
ALL OTHER GS	7	7
TOTAL PERM.	8	8

INSTALLATION OPERATIONS

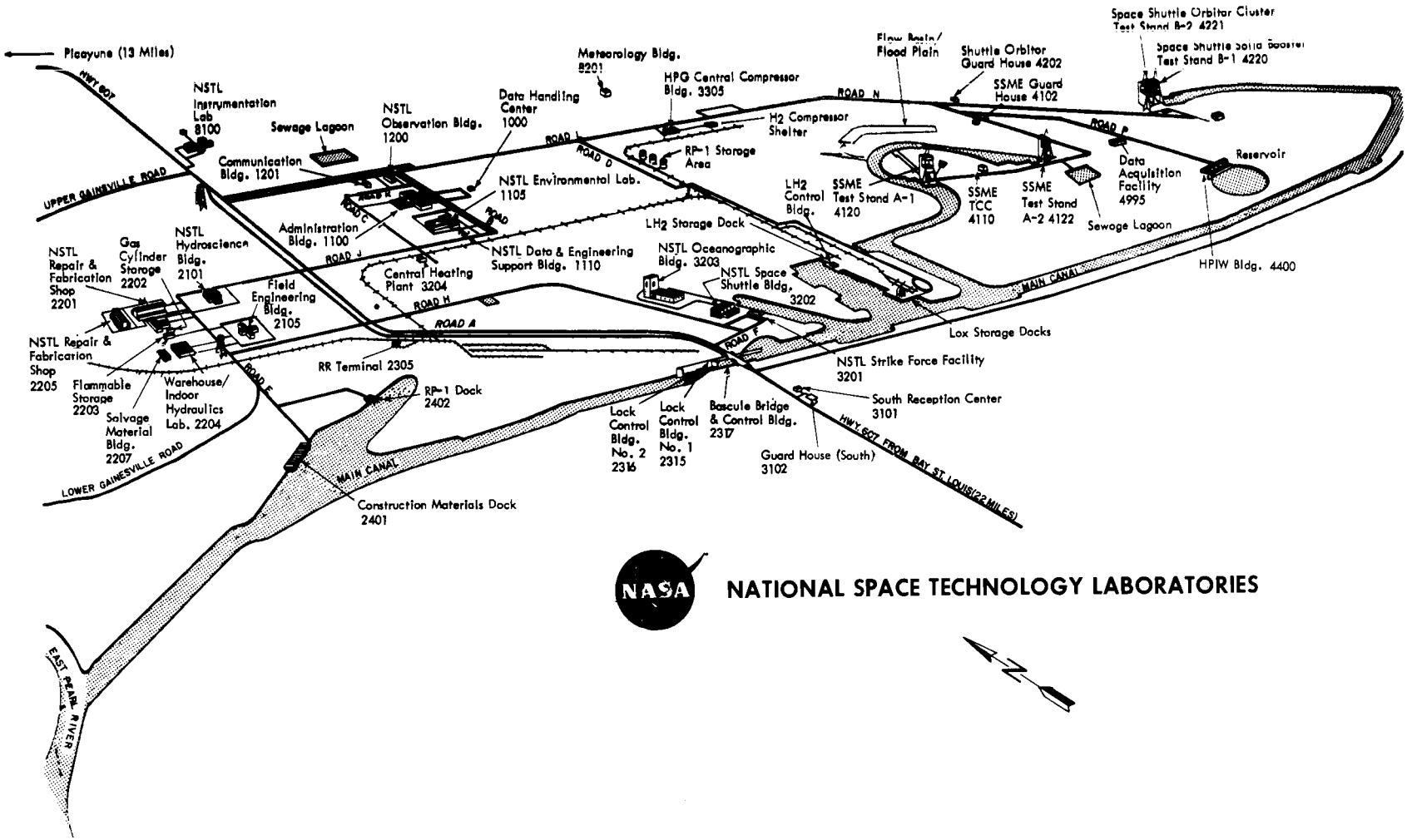
	FY 75	FY 76
GS 14	1	1
ALL OTHER GS	7	7
TOTAL PERMANENT	8	8

APPLICATIONS OPERATIONS

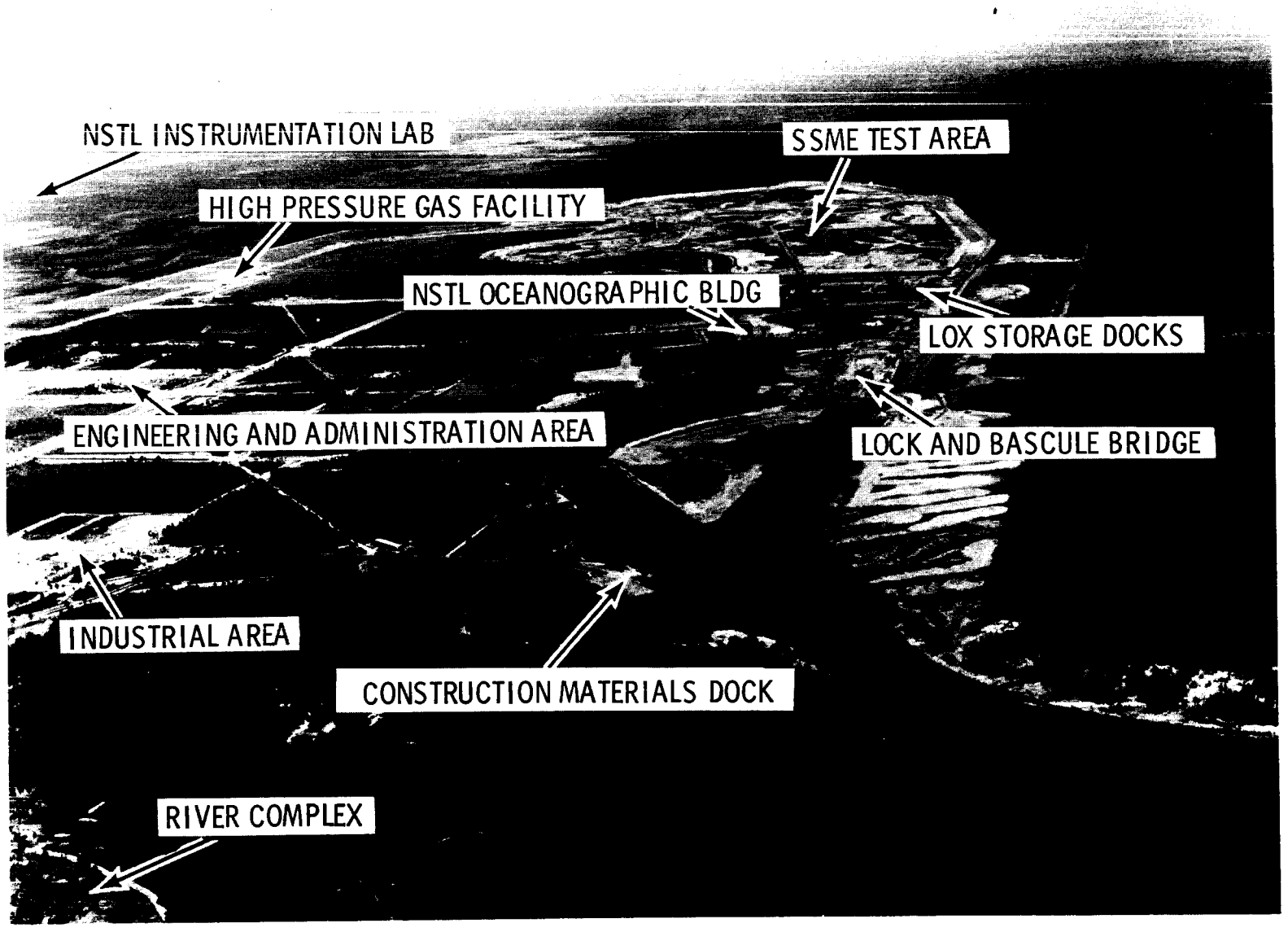
	FY 75	FY 76
GS 16	1	1
GS 15	1	1
GS 14	5	5
ALL OTHER GS	18	18
TOTAL PERMANENT	25	25


LEGEND
Interstate Highways
U.S. Highways
State Highways
Railroads
Commercial Airports
General Aviation
Military Airfields
Commercial Ports
Deep Water Ports
Colleges & Universities
Urban Areas
NSTL
FEE AREA 13,480 ACRES
BUFFER ZONE 125,327 "
TOTAL 138,807 "
POPLARVILLE
BOGALUSA
PICAYUNE
HAMMOND
COVINGTON
SLIDELL
NEW ORLEANS
DESOTO NATIONAL FOREST
NATIONAL SPACE TECHNOLOGY LABORATORIES
BUFFER ZONE
FEE AREA
HARRISON COUNTY INDUSTRIAL SEAWAY
SLIDELL COMPUTER COMPLEX
Lake Pontchartrain
MICHOUD ASSEMBLY FACILITY
LAKE BORGNE
LAKE CATAOUATCHE
REGIONAL MAP
N
SCALE IN MILES

NSTL LOCATION PLAN



NATIONAL SPACE TECHNOLOGY LABORATORIES-AERIAL VIEW



RESEARCH AND PROGRAM MANAGEMENT

FISCAL YEAR 1976 ESTIMATES

GODDARD SPACE FLIGHT CENTER

DESCRIPTION

The Goddard Space Flight Center, located 15 miles northeast of Washington D.C., at Greenbelt, Maryland, is situated on a 554-acre main site. Three additional nearby plots of 620 acres comprise the remote site area and contain the Goddard Antenna Test Range, the Goddard Optical Facility, the Propulsion Research Facility, the Magnetic Fields Component Test Facility, the Attitude Control Test Facility, and the Network Training and Test Facility.

The total capital investment for the Goddard Space Flight Center, including fixed assets in progress and contractor-held facilities at various locations as of June 30, 1974 was $724,257,000 (including capital type facilities of the Spaceflight Tracking and Data Network and other supporting activities including equipment aboard ships and aircraft).

MISSION

The Goddard Space Flight Center, established in 1959 as the first major United States installation devoted to the investigation and exploration of space, conducts a wide-ranging program of experimentation in space science and applications. The Goddard Center has developed many diverse capabilities: the management of complex satellite projects; the development of wholly integrated spacecraft, ranging from systems engineering to development, integration, and testing; the development and operation of satellite tracking networks data acquisition and analysis; and scientific research to include both theoretical studies and the development of many significant scientific experiments flown in satellites.

The majority of the Goddard Center's personnel are located at Greenbelt, Md.; other personnel are located at the Goddard Institute for Space Studies in New York City, and throughout the world, managing the operation of satellite tracking and communications network stations.

Goddard is responsible for the management of applications satellite projects, such as the Synchronous Meteorological Satellite (SMS), Television Infra-Red Observation Satellite (TIROS), Applications Explorer Missions (AEM), Nimbus, Earth Resources Technology Satellites (LANDSAT), Applications Technology Satellites (ATS); management of scientific satellite projects which include the Orbiting Solar Observatory (OSO), the Atmosphere Explorers (AE) and the small Explorer series; project management of the Delta launch vehicle; management and operation of the would-wide Spaceflight Tracking and Data Network

(STDN) and NASA Communications Network (NASCOM); and the Center carries out an extensive scientific and meteoroligical sounding rocket program.

Major Goddard activities during the year were in the following areas:

Applications Satellites - Goddard is presently involved with several key applications satellite projects: the Synchronous Meteorological Satellite (SMS), the Earth Resources Technology Satellite (LANDSAT), and the Applications Technology Satellite (ATS). The SMS-1 launched in May 1974, along with SMS-B, will provide continuous weather coverage from a geostationary orbit. The Earth Resources Technology Satellite is presently providing high quality images of the earth and aiding in a wide variety of earth resource disciplines. The ATS-6 launched in May 1974, is a highly flexible spacecraft carrying advanced meteorological, communications, air traffic control, and scientific experiments. Tiros-N will provide improved measurements of the earth's surface and its atmosphere for meteorological and environmental monitoring purposes.

Nimbus-5, now in orbit, provides additional data from instruments designed to help in weather analysis and prediction. Nimbus-F will provide basic data to assess the role of incoming solar radiation on large-scale weather systems. Nimbus-G will provide air pollution and oceanographic data on a global basis.

Scientific Satellites - During the past year Goddard managed scientific satellites have continued to probe the complex nature of our solar system and the universe. Explorer 50 (IMP J), launched in October 1973, continues the investigation of the interplanetary magnetic field and the magnetosphere that surrounds the earth. Atmospheric Explorer (AE-C), launched in December 1973, provides a satellite platform that is suitable for coordinated study of the thermosphere. Radio Astronomy Explorer B, launched in June 1973, continues to make measurements of galactic and solar radio noise at frequencies below ionospheric cutoffs and external to terrestrial background interference by utilization of the moon for occulation, focusing, or aperture blocking for increased resolution and discrimination. Work is underway on several other spacecraft which will result in launchings in the next year, including OSO-I, AE-D&E, and SAS-C.

International Programs - Goddard continues in its responsibility to carry out international cooperative efforts in space exploration. Technical assistance and launch support were provided for the German AEROS-2, Netherlands ANS satellites, United Kingdom UK-5 and Italian San Marco C-2. All were launched aboard NASA Scout rockets during 1974. The German built Helios Satellite containing three Goddard experiments was launched in December 1974 and is being tracked by NASA. Several other cooperative programs with Canada and Great Britain will result in spacecraft launchings within the next several years. Work is also underway on two major programs, International Sun/Earth Explorer (ISEE) and International Ultraviolet Explorer (IUE). ISEE will use three satellites (2 NASA, 1 ESRO) to conduct plasma and particle studies of the earth's magnetosphere. IUE will be used by both the United

States and foreign experimentors to sutdy the spectra of the stars.

Tracking and Data Acquisition - The Goddard-managed Spaceflight Tracking and Data Network (STDN) provides tracking and communications coverage for NASA's manned and unmanned satellites in earth orbit and at lunar distance. The network supports an average of approximately 40 spacecraft. Significant effort will be applied by the network in support of the Apollo Soyuz Test Project (ASTP).

Sounding Rockets - During 1974 more than 50 sounding rocket launchings, primarily from Wallops Island, Virginia, were conducted by Goddard bringing to over 1600 the number of sounding rocket launchings in the program since 1959.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

		1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)				
I.	Personnel.....	$81,990	$84,178	$87,099	$87,630	$22,861
II.	Travel.....	2,249	2,245	2,274	2,255	631
III.	Facilities Services	5,839	7,421	8,460	9,194	2,474
IV.	Technical Services.	2,445	1,882	1,791	1,914	508
V.	Administrative Support.....	4,958	4,853	5,209	4,854	1,266
	Total, fund requirements	$97,481	$100,579	$104,833	$105,847	$27,740

Distribution of Permanent Positions by Program

Over two-thirds of Goddard's permanent positions are used in direct support of the various R&D programs. The following table summarizes the actual and planned utilization of positions for direct program activity and for indirect support.

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	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
Direct Positions					
Manned Space Flight					
Space shuttle.....	5	2	6	7	7
Space flight operations	25	19	22	17	17
Apollo.....	---	1	---	---	---
Space Science					
Physics and astronomy..	1,036	1,106	1,039	987	987
Lunar and planetary exploration.....	140	145	150	140	140
Launch vehicle procurement.....	50	56	58	60	60
Applications					
Space Applications.....	697	611	654	673	673
Aeronautics and Space Technology					
Space and nuclear research and technology.....	64	74	80	105	105
Tracking and Data Acquisition.....	673	676	686	706	706
Technology Utilization...	7	7	7	7	7
Subtotal, Direct Positions.....	2,697	2,697	2,702	2,702	2,702
Indirect Positions					
Director and staff.....	16	16	17	17	17
Administrative support.	836	837	778	778	778
Research and development support.....	259	258	257	257	257
Subtotal, Indirect Positions.....	1,111	1,111	1,052	1,052	1,052
Total, Permanent Positions	3,808	3,808	3,754	3,754	3,754

PERSONNEL AND RELATED COSTS

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
I. PERSONNEL AND RELATED COSTS.....	$81,990	$84,178	$87,099	$87,630	$22,861
Basis of Fund Requirements					
A. Compensation and Benefits:					
1. Compensation:					
a. Permanent positions..	$74,063	$75,762	$78,350	$78,541	$20,426
b. Nonpermanent positions..	482	577	789	825	338
c. Overtime and other compensation..	545	606	589	601	150
Subtotal, Compensation..	$75,090	$76,945	$79,728	$79,967	$20,914
2. Benefits:.....	$6,497	$6,555	$6,898	$7,187	$1,828
Subtotal, Compensation and Benefits...	$81,587	$83,500	$86,626	$87,154	$22,742
B. Supporting Costs:					
1. Transfer of personnel.....	$44	$118	$69	$69	$17
2. Personnel training	359	560	404	407	102
Subtotal, Supporting Costs..	$403	$678	$473	$476	$119
Total, Personnel and Related Costs.....	$81,990	$84,178	$87,099	$87,630	$22,861
1. Compensation.....	$75,090	$76,945	$79,728	$79,967	$20,914
a. Permanent positions..	$74,063	$75,762	$78,350	$78,541	$20,426

The current estimate for 1975 is increased over the 1975 budget estimate due to the October 1974 pay raise which is partially offset by savings resulting from the manpower reduction from 3,808 positions to 3,754.

The increase in 1976 reflects the full year net cost of these actions.

Basis of Cost for Permanent Positions

In 1976 the cost of permanent positions will be $78,541 an increase of $191 from 1975. This increase results as follows:

Cost of permanent positions in 1975.....		$78,350
Cost Increases:.....		+3,130
Within Grade advances and career development		
Full year effect of 1975 actions.....	+$681	
Partial year effect of 1976 actions.....	+966	
Full year effect of October 1974 pay raise..	+1,150	
Additional extra day.....	+333	
Cost Decreases.....		-2,939
Full year effect of 1975 manpower reductions	-$434	
Turnover savings		
Full year effect of 1975 actions.....	-1,032	
Partial year effect of 1976 actions.....	-1,473	
Cost of permanent positions in 1976.....		$78,541

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
b. Nonpermanent positions:					
1. Cost.....	$482	$577	$789	$825	$338
2. Number of manyears..	80	96	114	116	48

The 1976 estimate will support the following programs at approximately the levels indicated below:

Distribution of Nonpermanent Manyears by Program

College cooperative training.....	31
Summer employment.....	19
Opportunity programs.....	51
Other temporary employment.....	15
Total.....	116

The current estimate for 1975 is increased from the 1975 budget estimate to reflect the cost of the October pay raise and an increase in opportunity programs, primarily for the establishment of a worker trainee program, which provides full time on the job training to disadvantaged high school graduates. The 1976 estimate reflects the full year cost of these actions at essentially the same level of program as 1975.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
c. Overtime and other compensation.....	$545	$606	$589	$601	$150

Overtime at Goddard is required to meet peak operational requirements usually culminating in the launch of a manned or automated spacecraft. Some of the areas most heavily utilizing overtime are fabrication, experimentation testing, and launching and tracking of the spacecraft. The current estimate for 1975 is reduced from the 1975 budget estimate due to a reassessment of overtime requirements based on 1974 experience and the estimated workload. The savings from this are partially offset by the cost of the October 1974 pay raise. The increase in 1976 reflects the full year cost of the pay raise.

2. Benefits.....	$6,497	$6,555	$6,898	$7,187	$1,828

The following table indicates the cost of personnel benefits for each major category:

Category of Cost					
Contribution to the Civil Service Retirement Fund..	$5,136	$5,302	$5,497	$5,511	$1,432
Contribution for employee life insurance.....	259	278	274	275	71

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
Contribution for employee health insurance.....	869	890	1,056	1,331	302
Constribution to FICA.....	16	20	26	27	11
Incentive awards...	38	35	35	35	10
Other personnel benefits.....	10	30	10	8	2
Severance pay.....	169	---	---	---	---
Total.....	$6,497	$6,555	$6,898	$7,187	$1,828

The current estimate for 1975 is increased from the 1975 budget estimate due to the higher cost of health insurance and the 20% increase in the government share of employee health premiums, effective in January 1975. The increase in 1976 reflects the full year cost of these increases.

B. Supporting Costs	$403	$678	$473	$476	$119

Supporting personnel costs provide for the expense of moving employees to their intial duty station or reassignment and for maintaining and expanding the skill of our employees. These costs are summarized as follows:

1. Transfer of personnel.....	$44	$118	$69	$69	$17

The current estimate for 1975 is decreased from the 1975 budget estimate due to the reduction in the level of hiring activity resulting from the reduced manpower levels. The estimate for 1976 provides for 46 moves, the same as currently estimated for 1975.

2. Personnel training	$359	$560	$404	$407	$102

The current estimate for 1975 is decreased from the 1975 budget estimate due to cancellation of a planned series of courses to conserve funds to meet requirements in other areas. The increase in 1976 is due to higher tuition rates.

TRAVEL

II. TRAVEL.....	$2,249	$2,245	$2,274	$2,255	$631

Approximately 85% of Goddard's travel funds support the Center's research and development programs. Goddard has approximately 200 active research and

development contracts in excess of $100,000. Technical officers are required to review contractors' performance at design reviews, fabrication, and during integration and test of the spacecraft. As projects reach the flight stage, support is required for pre-launch and post-launch activities. In addition to flight project management, Goddard responsibilities in the tracking and data acquisition effort necessitate travel to the stations in the world-wide tracking and data network for instrumentation of the sites and inspection prior to launch.

The current estimate for 1975 is increased from the 1975 budget estimates to reflect travel requirements to support the agency's "Outlook for Space" planning effort. This is partially offset by the effect of the recent legislation limiting federal travel expenses. Travel requirements for 1976 are estimated at the 1975 level, excluding "Outlook for Space" study which phases out at the end of 1975, and adjusted to take into account increased air tariffs.

Basis of Fund Requirements

Summary of Travel by Major Category

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
A. Program related travel.....	$1,816	$1,896	$1,965	$1,919	$541
B. Meeting and technical seminars.....	320	238	216	235	63
C. Administrative travel.....	113	111	93	101	27
Total Travel.....	$2,249	$2,245	$2,274	$2,255	$631

FACILITIES SERVICES

III. FACILITIES SERVICES..	$5,839	$7,421	$8,460	$9,194	$2,474

Basis of Fund Requirements

Summary of Facilities Services

A. Rental of Real Property.....	$92	$1,401	$1,290	$1,266	$286

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
B. Maintenance and Related Services					
1. Maintenance, repair, alterations of buildings and grounds.....	$844	$877	$856	$1,065	$278
2. Maintenance of equipment.....	220	350	226	275	83
3. Custodial services	1,384	1,401	1,281	1,417	372
Subtotal.....	$2,448	$2,628	$2,363	$2,757	$733
C. Operation of Facilities					
1. Utilities.....	$2,443	$2,619	$3,741	$4,145	$1,086
2. Supplies and equipment.....	856	773	1,066	1,026	369
Subtotal.....	$3,299	$3,392	$4,807	$5,171	$1,455
Total, Facilities Services	$5,839	$7,421	$8,460	$9,194	$2,474
A. Rental of Real Property.....	$92	$1,401	$1,290	$1,266	$286

The current estimate for 1975 is decreased from the 1975 budget estimate to reflect a 13% reduction in the GSA rates for property rentals.

B. Maintenance and Related Services	$2,448	$2,628	$2,363	$2,757	$733
1. Maintenance, repair and alterations of buildings and grounds.....	$844	$877	$856	$1,065	$278

This covers 35 buildings comprising 2.5 million square feet, 1,092 acres of ground, 489 acres of surfaced areas, and utility systems. The current estimate for 1975 is reduced from the 1975 budget estimate to reflect the deferral of maintenance activity to conserve funds required to cover utility

rate increases. The 1976 estimate provides for increased preventive maintenance services which have been deferred from previous years due to funding constraints.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
2. Maintenance of equipment.....	$220	$350	$226	$275	$83

The current estimate for 1975 is reduced from the 1975 budget estimate due to purchase, in 1974, of new equipment which is under warranty for most of 1975. The 1976 increase reflects the requirement to maintain this equipment plus increases in other equipment maintenance contract prices.

3. Custodial services	$1,384	$1,401	$1,281	$1,417	$372

The current estimate for 1975 is reduced from the 1975 budget estimate to reflect a revision to the janitorial support contract funding plan. The increase in 1976 provides for wage increases for both the janitorial and guard service contracts, with no increase in the level of support.

C. Operation of Facilities	$3,299	$3,392	$4,807	$5,171	$1,455
1. Utilities.....	$2,443	$2,619	$3,741	$4,145	$1,086

The current estimate for 1975 is increased from the 1975 budget estimate, due to a 66% rise in electric power rates, which is partically offset by a 16% reduction in consumption. The 1976 estimate provides for the full year cost of the 1975 rate increase with no increase in consumption.

2. Supplies and materials.....	$856	$773	$1,066	$1,026	$369

The current estimate for 1975 is increased from the 1975 budget estimate due primarily to higher prices for fuel oil and building materials. The 1976 estimate provides for an essentially level procurement activity with a small reduction in requirements for building materials.

TECHNICAL SERVICES

IV. TECHNICAL SERVICES...	$2,445	$1,882	$1,791	$1,914	$508

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Basis of Fund Requirements

Summary of Technical Services

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
A. Automatic Data Processing					
1. Equipment.....	$929	$437	$219	$237	$66
2. Programming and operations.....	634	730	881	875	224
Subtotal.....	$1,563	$1,167	$1,100	$1,112	$290
B. Engineering Services.	$75	$51	$80	$89	$21
C. Scientific and Technical Information and Educational Programs					
1. Operation of technical libraries.....	$371	$375	$317	$357	$100
2. Educational/ informational programs.....	300	156	184	227	65
3. Scientific and technical information.....	136	133	110	129	32
Subtotal.....	$807	$664	$611	$713	$197
Total, Technical Services	$2,445	$1,882	$1,791	$1,914	$508
A. Automatic Data Processing.....	$1,563	$1,167	$1,100	$1,112	$290

The current estimate for 1975 is reduced from the 1975 budget estimate due to the decision to forego procurement of additional computer capability to allow reprogramming of funds required to cover the utility rate increases. The 1976 estimate reflects continuation of the 1975 level of services.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
B. Engineering Services.	$75	$51	$80	$89	$21

The current estimate for 1975 is increased above the 1975 budget estimate to provide for design and drafting services in support of facility alteration and modification projects required to implement the recent organizational realignments at the center. The 1976 estimate provides for continuation of this activity with adjustment for contractor wage increases.

C. Scientific and Technical Information and Educational Programs	$807	$664	$611	$713	$197
1. Operation of technical libraries.....	$371	$375	$317	$357	$100

The library collection includes over 45,000 books, 37,000 volumes of bound journals and 1,800 current journals, plus 900,000 microfiche copies of aerospace documents. Negotiation of a new library operation contract for 1975 resulted in decreased cost for services while maintaining the same level of effort as estimated in the 1975 budget. The increase in 1976 is due to higher contractor wage rates, with no increase in the level of effort.

2. Educational/information programs.....	$300	$156	$184	$227	$65

The current estimate for 1975 is increased from the budget estimate to initiate expansion of the visitors center in preparation for the Nation's bicentennial celebration.

The 1976 estimate provides primarily for completion of the visitors center expansion and the operation of the center during the first six months of the bicentennial.

3. Scientific and technical information....	$136	$133	$110	$129	$32

The current estimate for 1975 is reduced from the 1975 budget estimate to allow funding of utility rate increases. The 1976 estimate allows partial return to the normal level of funding to support this activity.

ADMINISTRATIVE SUPPORT

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
V. ADMINISTRATIVE SUPPORT.....	$4,958	$4,853	$5,209	$4,854	$1,266

Basis of Fund Requirements

Summary of Administrative Support

A. Communications					
1. Leased lines and long distance tolls.....	$746	$794	$824	$829	$212
2. Local telephone service.....	950	1,020	973	983	257
3. Other communications.....	13	14	13	14	4
Subtotal.....	$1,709	$1,828	$1,810	$1,826	$473
B. Administrative Printing and Reproduction.....	$161	$130	$130	$107	$30
C. Supplies, Materials, and Equipment.....	$1,053	$889	$950	$895	$231
D. Transportation					
1. Center operations	$1,394	$1,402	$1,400	$1,391	$365
2. Common carrier...	26	18	18	19	---
Subtotal.....	$1,420	$1,420	$1,418	$1,410	$365
E. Administrative Support Services					
1. Installation support services..	$329	$278	$605	$285	$80

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
2. Occupational medicine and environmental health.....	$286	$308	$296	$331	$87
Subtotal.....	$615	$586	$901	$616	$167
Total, Administrative Services.....	$4,958	$4,853	$5,209	$4,854	$1,266
A. Communications.....	$1,709	$1,828	$1,810	$1,826	$473

The current estimate for 1975 is reduced from the 1975 budget estimate to reflect a reduction in Goddard's share of the cost of the Federal Telecommunications Service (FTS) lines. This is partially offset by the higher cost of leased lines. The increase in 1976 provides for higher FTS rates, and the full year cost of the leased lines.

B. Administrative Printing and Reproduction.....	$161	$130	$130	$107	$30

The 1976 decrease reflects the center's continuing reduction in the level of contract printing and reproduction services to help offset severe cost increases in other areas.

C. Supplies, Materials and Equipment.....	$1,053	$889	$950	$895	$231

The current estimate for 1975 is increased from the 1975 budget estimate to reflect higher prices for office supplies, primarily paper products, and the decision to purchase previously leased equipment, for which a lease/purchase analysis indicated economies would be achieved through purchase. The decrease in 1976 reflects the savings in lease costs resulting from this action.

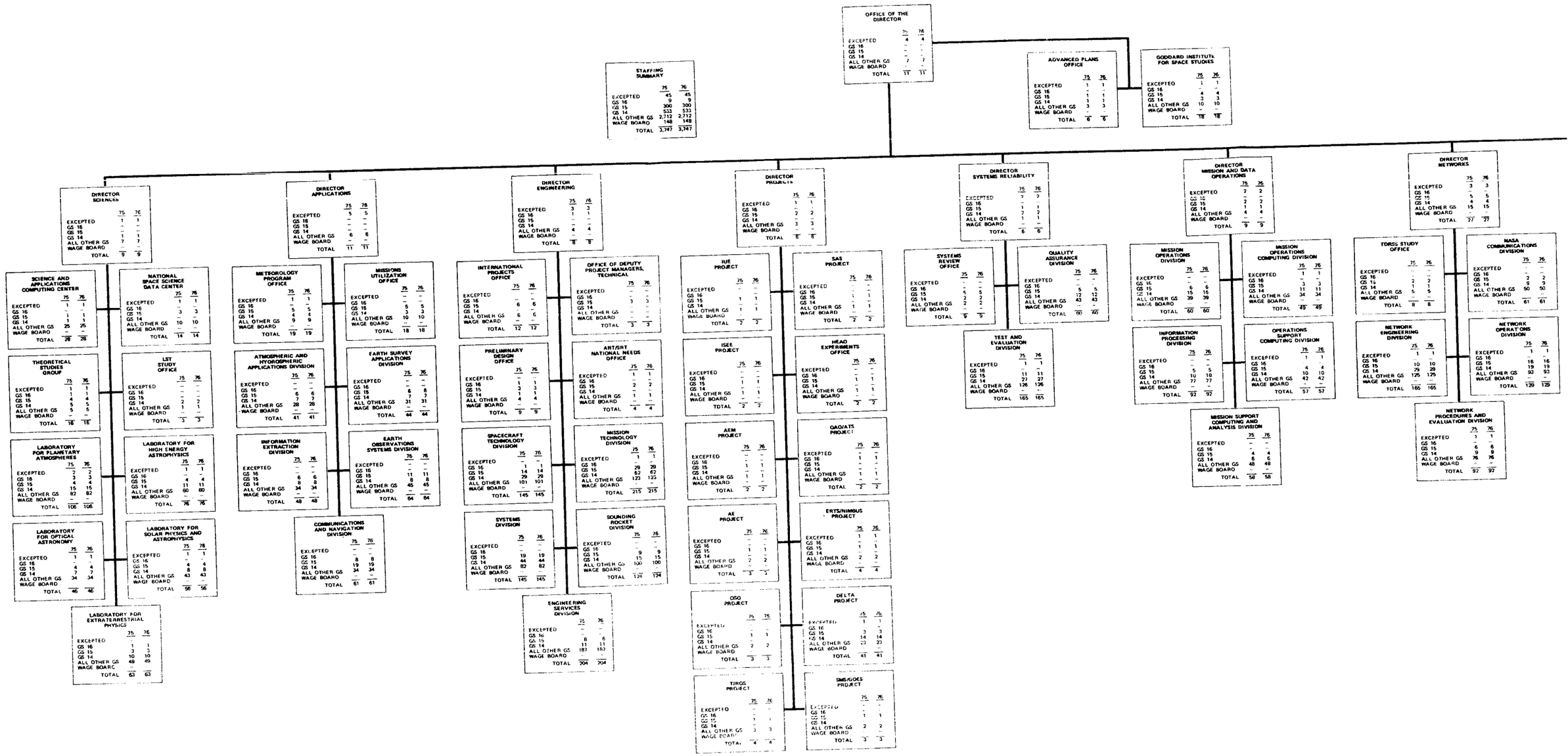
D. Transportation.....	$1,420	$1,420	$1,418	$1,410	$365

These funds provide primarily for the on-site transportation and warehousing contractor, whose level of support remains essentially constant from year to year.

E. Administrative Support Services.....	$615	$586	$901	$616	$167

The current estimate for 1975 is increased from the 1975 budget estimate to provide contract support for the agency's "Outlook for Space" planning effort. The 1976 estimates reflect a return in the previous level of activity, excluding "Outlook" which is scheduled to be completed by the end of 1975.

GODDARD SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
ORGANIZATION AND STAFFING SUMMARY



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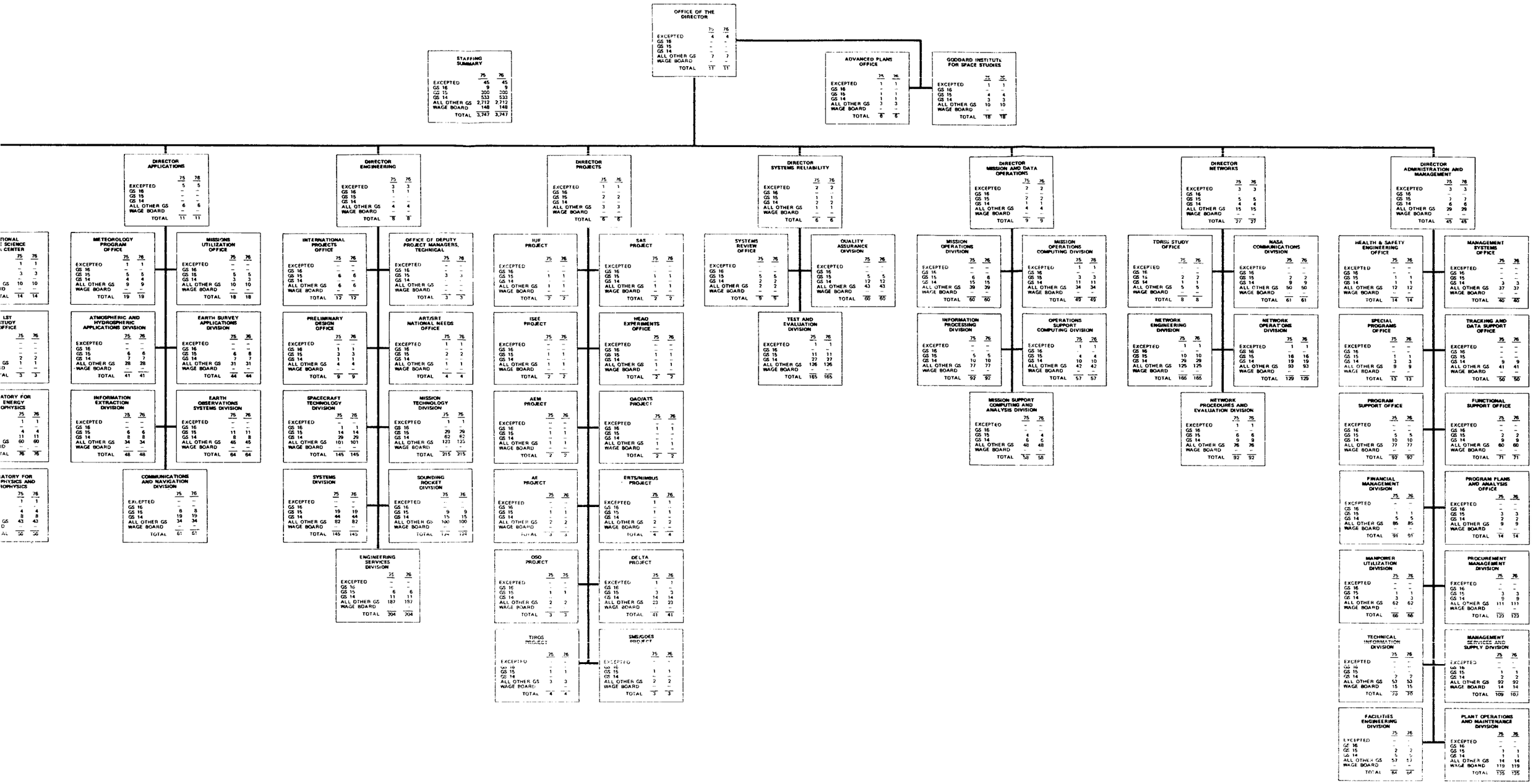
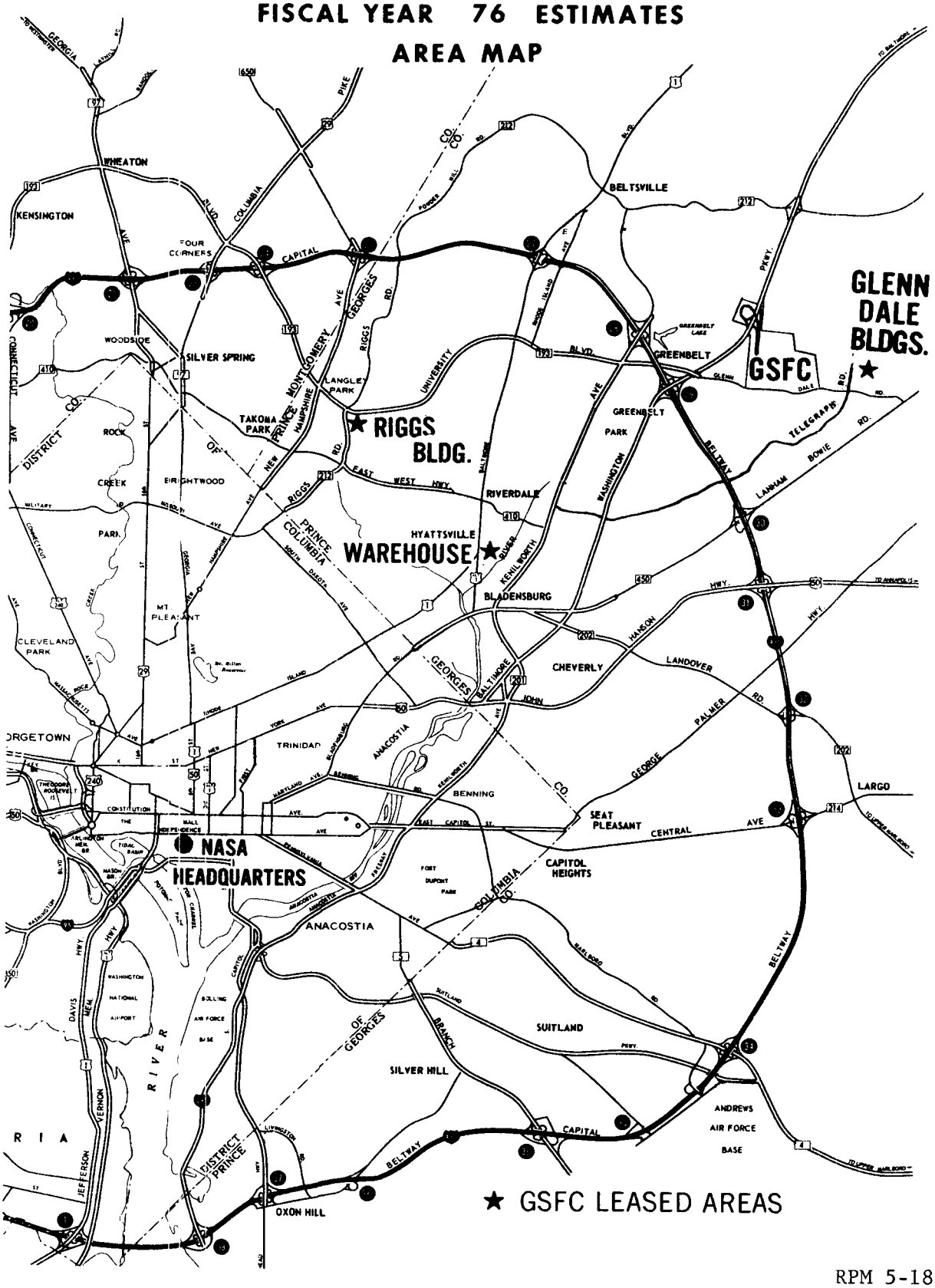
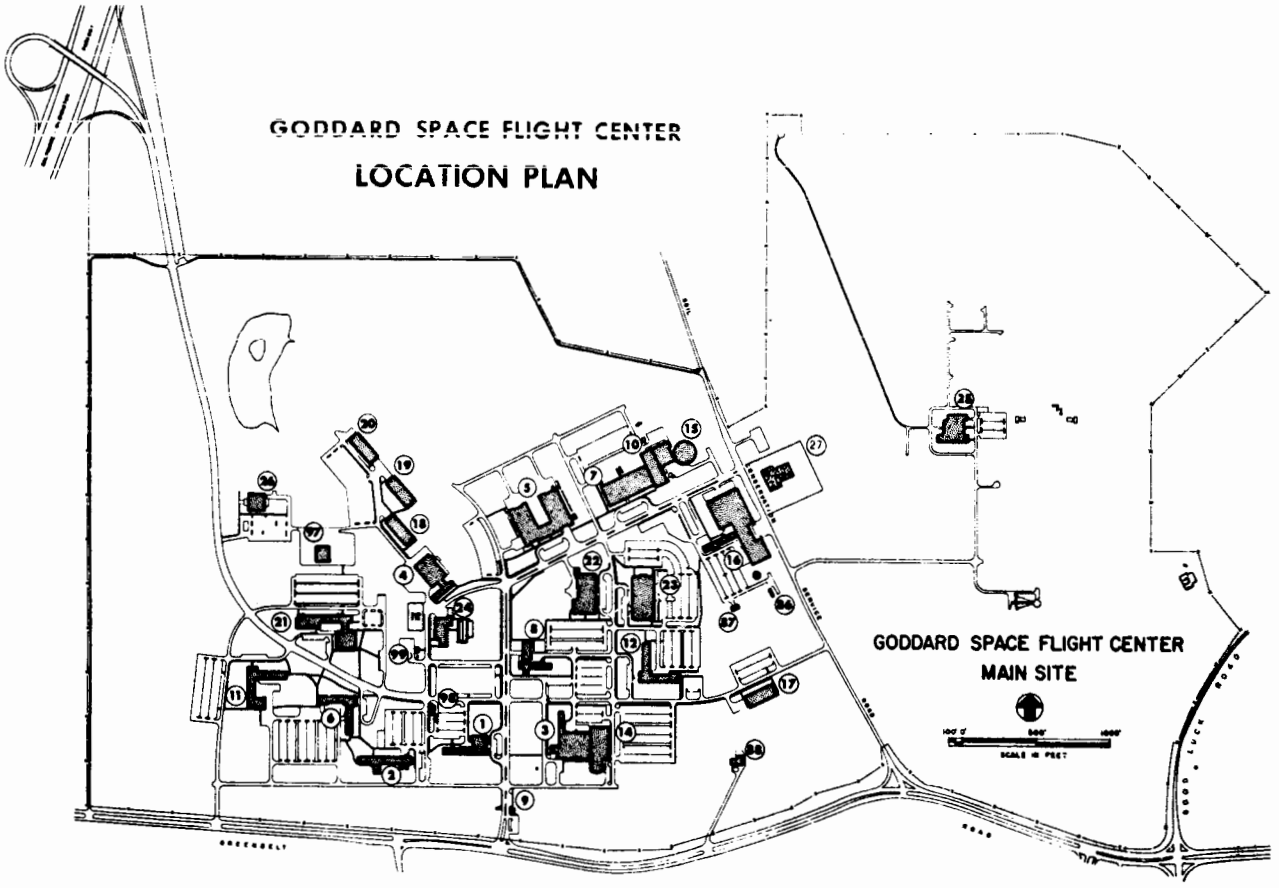
GODDARD SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
ORGANIZATION AND STAFFING SUMMARY



GODDARD SPACE FLIGHT CENTER
FISCAL YEAR 76 ESTIMATES
AREA MAP





1 SPACE PROJECTS BUILDING
2 RESEARCH PROJECTS LABORATORY
3 CENTRAL FLIGHT CONTROL & RANGE OPERATIONS BUILDING
4 GENERAL PURPOSE FACILITY BUILDING
5 INSTRUMENT CONSTRUCTION & INSTALLATION LABORATORY
6 SPACE SCIENCES LABORATORY
7 PAYLOAD TESTING FACILITY
8 SATELLITE SYSTEMS BUILDING
9 MAIN GATE HOUSE
10 ENVIRONMENTAL TESTING LABORATORY
11 APPLIED SCIENCES LABORATORY
12 TRACKING & TELEMETRY LABORATORY
14 SPACECRAFT OPERATIONS FACILITY
15 LAUNCH PHASE SIMULATOR
16 DEVELOPMENT OPERATIONS BUILDING
17 MULTI-PURPOSE BUILDING
18 BUSINESS OPERATIONS BUILDING
19 MULTI-PURPOSE BUILDING
20 GEOCHEMISTRY BUILDING
21 METEOROLOGICAL SYSTEMS DEVELOPMENT LABORATORY
22 MECHANICAL TEST FACILITY & QUALITY ASSURANCE LABORATORY
23 DATA INTERPRETATION LABORATORY
24 CENTRAL HEATING & REFRIGERATION PLANT
25 NETWORK TRAINING & TEST FACILITY
26 NASA SPACE SCIENCE DATA CENTER
27 MOBILE EQUIPMENT SUPPORT FACILITY
86 ANTENNA CONTROL BUILDING
87 GAS CYLINDER STORAGE BUILDING
88 WWV FACILITY
97 MAINTENANCE SHOPS (AUTO)
98 BUDGET BUILDING
99 CONSTRUCTION FIELD OFFICE

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WALLOPS FLIGHT CENTER

DESCRIPTION

Wallops Flight Center includes three separate areas on the Atlantic Coast of Virginia's eastern shore: the main base, the Wallops Island launching site, and the Wallops mainland site. The administrative offices, range control center, support shops, and main telemetry buildings are located on the main base. Wallops Island is about seven miles southeast of the main base and is connected to the mainland by a causeway and bridge. The island is about five miles long and only one-half mile wide at its widest point. Located on the island are rocket storage buildings, blockhouses, assembly shops and launch sites. The Wallops mainland site is a one-half mile strip west of the island which houses the radar and optical tracking sites.

Wallops Flight Center, totaling 6,561 acres, consists of 2,313 acres on the main base; 3,000 acres on Wallops Island; 108 acres on the mainland tracking site; and 1,140 acres of unusable marsh land. The total capital investment, including fixed assets in progress and contractor-held facilities at various locations, as of June 30, 1974 was $125,334,000.

MISSION

Wallops Flight Center is responsible for planning and conducting applied research and development with emphasis on scientific payload development, instrumentation, facilities and techniques, aeronautical and terminal area research projects and ecological studies.

Wallops Flight Center prepares, assembles, launches, tracks and acquires scientific information from space vehicles. Its facilities are utilized by the scientists and engineers from the laboratories and research centers of NASA, other governmental agencies, colleges and universities, and the worldwide scientific community. Center personnel assist these scientific research teams with their projects and develop, as necessary, special types of instrumentation and equipment to complete the mission and manage NASA research projects.

Research at Wallops Flight Center is directed toward gathering information about the earth's atmosphere and its near space environment. The Center utilizes launch vehicles ranging in size from the small Arcas and Hasp meteorological rockets to the 72-foot Scout rocket with orbital capability in obtaining scientific data about the atmosphere and the near space environment. Sixteen satellites have been launched. Wallops Flight Center has launched approximately 8,000 research vehicles consisting of from one to seven stages in the quest for scientific knowledge.

Wallops facilities are utilized for many other research projects, such as space component tests, helicopter and aircraft drop tests, helicopter and aircraft noise projects, anti-skid tests on grooved runways, V/STOL terminal air research, collision avoidance programs, and laser and radar tracking of aircraft and satellites.

Wallops Flight Center exercises project management responsibility for several NASA sponsored projects such as GEOS-C, the Experimental Inter-American Meteorological Rocket Network (EXAMETNET), operation of remote site launching and tracking facilities, and operation of NASA's portable range facilities for sounding rockets.

The Center is also responsible for a portion of the National Sounding Rocket Program. This requires interface with the scientific, university and international community; engineering support including analytical, feasibility, and design studies, payload, vehicles and recovery system engineering, test and evaluation; and data analysis and reporting.

A portion of the Center's effort is devoted to NASA's program of international cooperation in space research. Foreign countries are provided with training programs for their personnel, assistance in activation of launch sites, and with technical assistance and advice in launching experiments and in operation of their ranges. Representatives of foreign countries have visited Wallops Flight Center to observe operations or seek assistance in establishing sounding rocket facilities of their own.

Wallops Flight Center is involved in the applications of remote sensing from aircraft and space platforms in the Chesapeake Bay area. As part of the program, the Center is working closely with user groups to develop remote sensing analysis and monitoring techniques for studying the ecology of the area.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

	Functions	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)				
I.	Personnel and Related Costs.....	$7,784	$8,037	$8,278	$8,527	$2,197
II.	Travel.....	234	265	237	251	123
III.	Facilities Services.	2,651	2,413	2,654	2,920	877
IV.	Technical Services..	193	227	248	274	17
V.	Administrative Support.....	626	762	683	733	329
	Total, fund requirements.....	$11,488	$11,704	$12,100	$12,705	$3,543

Distribution of Permanent Positions by Program

The following table summarizes the actual and planned utilization of positions for direct program activity and for indirect support.

Direct Positions					
Manned Space Flight					
Space flight operations..	2	5	1	1	1
Space Science					
Physics and astronomy....	66	83	67	63	63
Lunar and planetary exploration.....	2	2	1	1	1
Launch vehicle procurement.....	3	3	3	3	3

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
Direct Positions (Cont'd)					
Space Applications.....	62	62	58	63	63
Aeronautics and Space Technology					
Aeronautical research and technology.....	18	36	19	18	18
Space and nuclear research and technology.....	1	2	2	2	2
Tracking and Data Acquisition.....	99	53	99	99	99
Subtotal, direct positions.....	253	246	250	250	250
Indirect Positions					
Director and staff.....	6	4	6	6	6
Administrative support....	72	69	72	72	72
Research and development support.....	89	101	87	87	87
Subtotal, indirect positions.....	167	174	165	165	165
Total, permanent positions.	420	420	415	415	415

PERSONNEL AND RELATED COSTS

I. PERSONNEL AND RELATED COSTS	$7,784	$8,037	$8,278	$8,527	$2,197

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
Basis of Fund Requirements					
A. Compensation and Benefits					
1. Compensation					
a. Permanent positions...	$6,856	$7,050	$7,233	$7,411	$1,902
b. Nonpermanent positions...	112	140	189	206	60
c. Overtime and other compensation...	146	112	115	118	32
Subtotal, Compensation...	$7,114	$7,302	$7,537	$7,735	$1,994
2. Benefits.....	627	654	695	731	188
Subtotal, Compensation and Benefits	$7,741	$7,956	$8,232	$8,466	$2,182
B. Supporting Costs					
1. Transfer of personnel.....	$5	$6	$6	$6	---
2. Personnel training.....	38	75	40	55	15
Subtotal, Supporting Costs....	$43	$81	$46	$61	$15
Total, Personnel and Related Costs.....	$7,784	$8,037	$8,278	$8,527	$2,197
1. Compensation.....	$7,114	$7,302	$7,537	$7,735	$1,994
a. Permanent positions.....	$6,856	$7,050	$7,233	$7,411	$1,902

The current estimate for 1975 is increased from the 1975 budget estimate due to the October 1974 pay raise. This is partially offset by the savings resulting from the reduction in manpower from 420 to 415.

The increase in 1976 reflects the full year net effect of these actions.

Basis of Cost for Permanant Positions
(Thousands of Dollars)

In 1976 the cost of permanent positions will be $7,411, an increase of $178 from 1975. This increase is calculated as follows:

Cost of permanent positions in 1975		$7,233
Cost increases in 1976:		+311
Within grade advances and career development		
Full year effect of 1975 actions	+$96	
Partial year effect of 1976 action	+89	
Full year effect of October 1974 pay raise	+$98	
Additional extra day	+28	
Cost decreases in 1976:		-133
Abolished positions and turnover savings		
Full year effect of 1975 actions	-$88	
Partial year effect of 1976 actions	-45	
Cost of permanent positions in 1976		$7,411

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Dollars in Thousands)				
b. Nonpermanent positions					
1. Cost	$112	$140	$189	$206	$60
2. Number of manyears	20	24	31	33	10

The 1976 estimate will support the following programs at approximately the levels indicated below:

Distribution of Nonpermanent Manyears by Program

Program	Manyears
College Cooperative Training	14
Summer employment	3
Opportunity Programs	14
Other temporary employment	2
Total	33

The current estimate for 1975 is increased from the 1975 budget estimate to reflect the cost of the October 1974 pay raise and the establishment of a Worker Trainee Opportunity program which provides full time on the job training to promising high school graduates. The 1976 estimate reflects the full year cost of these actions at essentially the same level of program as 1975.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
c. Overtime and other compensation.....	$146	$112	$115	$118	$32

Overtime funds are required at Wallops primarily to meet operational requirements of the sounding rocket programs of the Physics and Astronomy and Space Applications programs. Many factors beyond the Center's control, such as launch schedules, weather holds, and range clearance problems necessitate work beyond the normal hours to operate the launch facilities, provide instrumentation support, and conduct tracking and data acquisition activities required to assure mission success.

The current estimate for 1975 is increased over the 1975 budget estimate to allow for the October 1974 pay raise. The increase in 1976 reflects the full year cost of the pay raise.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
2. Benefits.....	$627	$654	$695	$731	$188

The following table indicates the cost of personnel benefits by the major categories:

Category of Cost					
Contribution to the Civil Service Retirement Fund.....	$483	$500	$511	$524	$134
Contribution for employees life insurance.....	26	35	29	30	8
Contribution for employees health insurance.....	113	104	144	165	42
FICA.....	3	8	8	9	2
Incentive awards.....	---	5	1	1	1
Other benefits.....	2	2	2	2	1
Total.....	$627	$654	$695	$731	$188

The current estimate for 1975 is increased over the budget estimate to account for the higher cost of health insurance premiums and a 20% increase in the government contribution to the Federal Health Benefits Program, effective in January 1975. The increase in 1976 reflects the full year cost of these actions.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
B. Supporting Costs.....	$43	$81	$46	$61	$15
1. Transfer of personnel.....	$5	$6	$6	$6	---

The estimates for 1975 and 1976 provide for a continuation at the 1974 level. Most recent experience indicates that on the average one move per year occurs.

2. Personnel training.....	$38	$75	$40	$55	$15

The current estimate for 1975 is reduced from the 1975 budget estimate based on 1974 experience. The 1976 estimate is increased to account for the transfer of previously on-site courses, conducted by the University of Virginia to their new campus, where tuition rates are much higher.

TRAVEL

II. TRAVEL.....	$234	$265	$237	$251	$123

The amount requested for 1976 provides for approximately 1,100 trips to locations throughout the United States and other countries in support of the Center's programs. Sounding rockets, SEASAT, GEOS-C, and Earth Resources projects account for most of the trips in this country. Travel to foreign countries in support of launches and to tracking sites is required for the projects listed below.

International Cooperative Meteorological Program - trips to New Zealand, Brazil, England, France, and Spain.

Sounding Rocket Support - trips to Kerguelen, France, Peru, and Ft. Churchill, Canada

San Marco Support - trips to Italy, and Kenya, Africa

The current estimate for 1975 is reduced from the 1975 budget estimate to reflect the recently enacted legislation reducing federal travel expenses. Travel requirements for 1976 are estimated at the 1975 level and adjusted to account for increased air fares.

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Basis of Fund Requirements

Summary of Travel by Major Category

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
A. Program related travel.....	$100	$141	$123	$131	$35
B. Meetings and technical seminars.....	20	18	16	17	4
C. Administrative travel.....	114	106	98	103	84
Total Travel.....	$234	$265	$237	$251	$123

FACILITIES SERVICES

III. FACILITIES SERVICES...	$2,651	$2,413	$2,654	$2,920	$877

Basis of Fund Requirements

Summary of Facilities Services

A. Maintenance and Related Services					
1. Maintenance, repair and alterations of buildings and grounds.....	$565	$566	$550	$615	$48
2. Custodial services..	757	720	742	809	191
3. Maintenance and equipment.....	178	180	180	192	147
Subtotal.....	$1,500	$1,466	$1,472	$1,616	$386

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
B. Operation of Facilities					
1. Utilities.....	$400	$331	$574	$645	$382
2. Supplies and equipment.....	751	616	608	659	109
Subtotal.....	$1,151	$947	$1,182	$1,304	$491
Total, Facilities Services..	$2,651	$2,413	$2,654	$2,920	$877
A. Maintenance and Related Services.....	$1,500	$1,466	$1,472	$1,616	$386
1. Maintenance, repair and alterations of buildings and grounds.....	$565	$566	$550	$615	$48

Over 330 buildings and approximately one million square feet of building space on 6,561 acres must be maintained. The corrosive environment at Wallops Flight Center caused by its proximity to the ocean, requires frequent maintenance and repair of exterior surfaces, roofing, utility distribution systems, mechanical doors, hardware and building equipment.

The current estimate for 1975 is decreased from the 1975 budget estimate to reflect a deferral of maintenance. In examining priorities it was concluded that this action was necessary to allow the use of these funds to cover the increasing cost of utilities. The increase in 1976 provides for a return to the normal level of maintenance activity taking into account the cost of wage and price increases.

2. Custodial services.....	$757	$720	$742	$809	$191

The current estimate for 1975 is increased from the 1975 budget estimate to reflect wage increases in the supply management support contract renegotiated during 1975. The 1976 increase reflects the full year cost of this contract increase.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
3. Maintenance of equipment.....	$178	$180	$180	$192	$147

The increase in 1976 reflects wage increases for the heating plant maintenance and operations support contractor.

B. Operation of Facilities.....	$1,151	$947	$1,182	$1,304	$491
1. Utilities.....	$400	$331	$574	$645	$382

The current estimates for 1975 and 1976 reflect the same level of usage as experienced in 1974. The increase in the current estimate for 1975 from the 1975 budget estimate is necessary to cover a 43% increase in electric power rates. The increase in 1976 reflects further rate escalation.

2. Supplies and equipment.....	$751	$616	$608	$659	$109

The current estimate for 1975 is reduced from the 1975 budget estimate due to the purchase, late in 1974, of equipment originally planned for purchase in 1975. The increase in 1976 reflects higher supply and equipment prices.

TECHNICAL SERVICES

IV. TECHNICAL SERVICES.....	$193	$227	$248	$274	$17

Basis of Fund Requirements

Summary of Technical Services

A. Automatic Data Processing					
1. Equipment.....	$6	$25	$25	$39	$2
2. Programming and operation.....	95	80	99	106	---
Subtotal.....	$101	$105	$124	$145	$2

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
B. Engineering Services.....	$17	$32	$33	$33	---
C. Scientific and Technical Information and Educational Programs					
1. Operation of NASA technical library..	$72	$82	$83	$88	$13
2. Educational/informational programs..	3	8	8	8	2
Subtotal.....	$75	$90	$91	$96	$15
Total, Technical Services....	$193	$227	$248	$274	$17
A. Automatic Data Processing.....	$101	$105	$124	$145	$2

The current estimate for 1975 is increased from the 1975 budget estimate to provide for wage increases in the support contract for programming and operations services, which were agreed to late in 1974 after formulation of the 1975 budget estimate. The increase in 1976 reflects the lease cost of a remote business terminal acquired in 1975.

B. Engineering Services.....	$17	$32	$33	$33	---

This activity remains at essentially the same level in 1975 and 1976.

C. Scientific and Technical Information and Educational Programs.....	$75	$90	$91	$96	$15
1. Library services.....	$72	$82	$83	$88	$13

The increase in 1976 reflects wage increases in the library services contract and the higher cost of subscriptions.

2. Educational programs.....	$3	$8	$8	$8	$2

This activity reflects the same level in 1975 and 1976.

ADMINISTRATIVE SUPPORT

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
V. ADMINISTRATIVE SUPPORT....	$626	$762	$683	$733	$329

Basis of Fund Requirements

Summary of Administrative Support

A. Communications					
1. Leased lines and long distance.....	$4	$3	$5	$6	$6
2. Local telephone service.....	98	99	118	122	122
3. Other communications..	---	2	---	---	---
Subtotal.....	$102	$104	$123	$128	$128
B. Administrative Printing.....	$51	$50	$57	$62	$62
C. Supplies, Materials and Equipment.....	$384	$520	$402	$458	$98
D. Transportation					
1. Center operations.....	$54	$41	$54	$36	$13
2. Common carrier.....	15	23	23	23	2
Subtotal.....	$69	$64	$77	$59	$15
E. Administrative Support Services					
1. Installation support services.....	$1	---	$1	$1	$1
2. Occupational medicine and environmental health.....	19	24	23	25	25
Subtotal.....	$20	$24	$24	$26	$26
Total, Administrative Support.....	$626	$762	$683	$733	$329

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
A. Communications.....	$102	$104	$123	$128	$128

The current estimate for 1975 is increased from the budget estimate to account for higher wages in the switchboard operations support contract and the higher cost of leased lines. The rise in 1976 reflects the full year cost of these increases.

B. Administrative Printing	$51	$50	$57	$62	$62

The increase in the current estimate for 1975 over the budget estimate provides for the higher renewal cost of the contract for printing and reproduction services. The full year cost of this increase is reflected in 1976.

C. Supplies, Materials and Equipment.....	$384	$520	$402	$458	$98

The lower current estimate for 1975 reflects a reduction in the inventory replacement rates to help offset the increased cost of utilities. The increase in 1976 provides for resumption of normal supply operations.

D. Transportation.....	$69	$64	$77	$59	$15

The current estimate for 1975 is increased from the 1975 budget estimate to provide for updating the avionics equipment on the Wallops administrative aircraft. The estimate for 1976 reflects the return to a normal level of aircraft maintenance.

E. Administrative Support Services.....	$20	$24	$24	$26	$26

The increase in 1976 reflects wage increases for contract medical services.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
ORGANIZATION AND STAFFING CHART
WALLOPS FLIGHT CENTER

STAFFING SUMMARY

	CY 75	BY 76
Excepted	2	2
GS-16	1	1
GS-15	11	11
GS-14	25	25
All Other GS	334	334
Wage Grade	42	42
Total Permanent	415	415

DIRECTOR

	CY	BY
Excepted	2	2
GS-16	-	-
GS-15	2	2
GS-14	-	-
All Other GS	2	2
Wage Grade	-	-
Total Permanent	6	6

OPERATIONS DIRECTORATE

	CY	BY
Excepted	-	-
GS-16	-	-
GS-15	3	3
GS-14	7	7
All Other GS	111	111
Wage Grade	1	1
Total Permanent	122	122

ENGINEERING DIRECTORATE

	CY	BY
Excepted	-	-
GS-16	1	1
GS-15	3	3
GS-14	12	12
All Other GS	73	73
Wage Grade	-	-
Total Permanent	89	89

ADMINISTRATION DIRECTORATE

	CY	BY
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	1	1
All Other GS	68	68
Wage Grade	-	-
Total Permanent	70	70

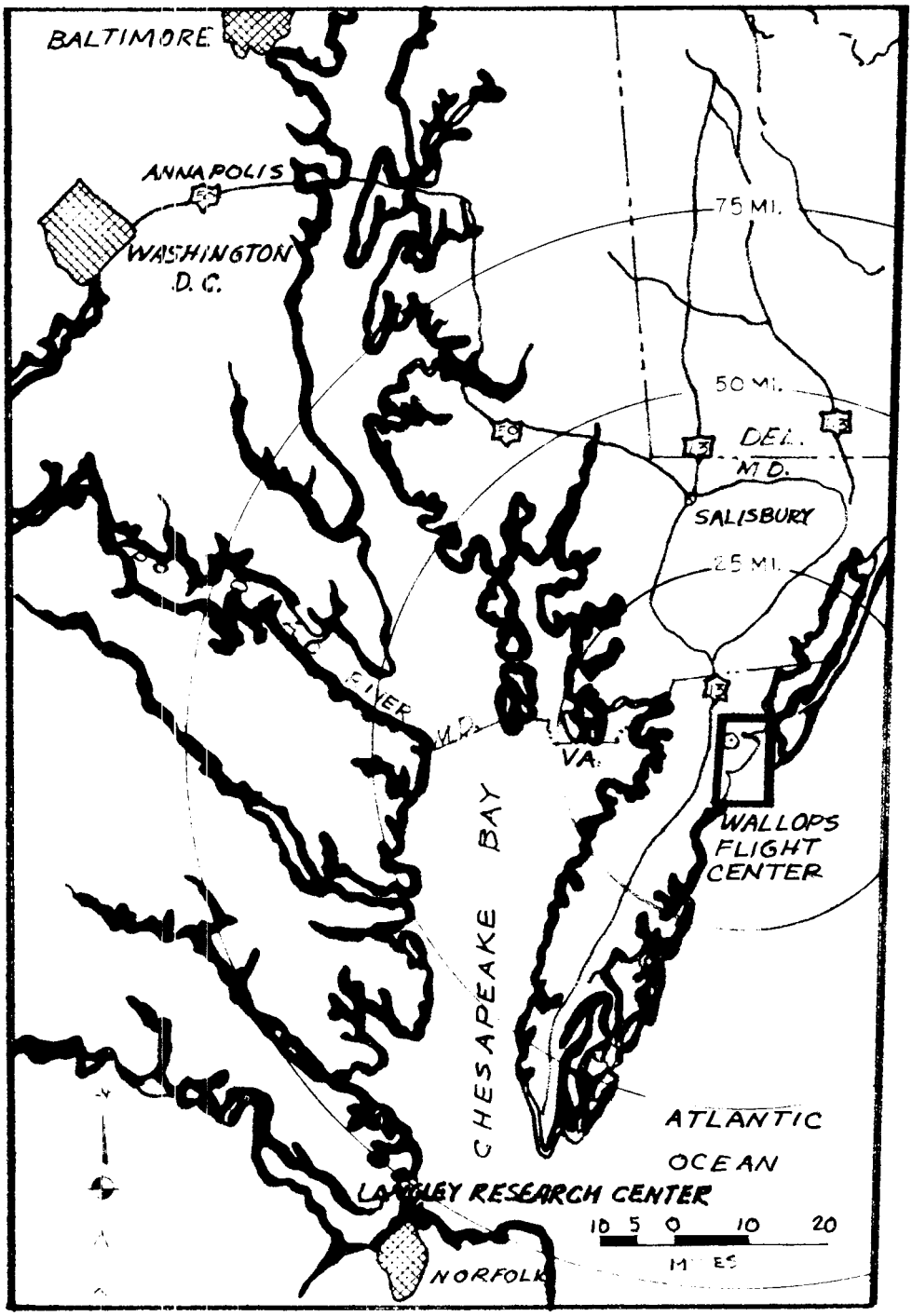
TECHNICAL SUPPORT DIRECTORATE

	CY	BY
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	-	-
All Other GS	70	70
Wage Grade	41	41
Total Permanent	112	112

APPLIED SCIENCE DIRECTORATE

	CY	BY
Excepted	-	-
GS-16	-	-
GS-15	1	1
GS-14	5	5
All Other GS	10	10
Wage Grade	-	-
Total Permanent	16	16

—WALLOPS—
FLIGHT CENTER LOCATION



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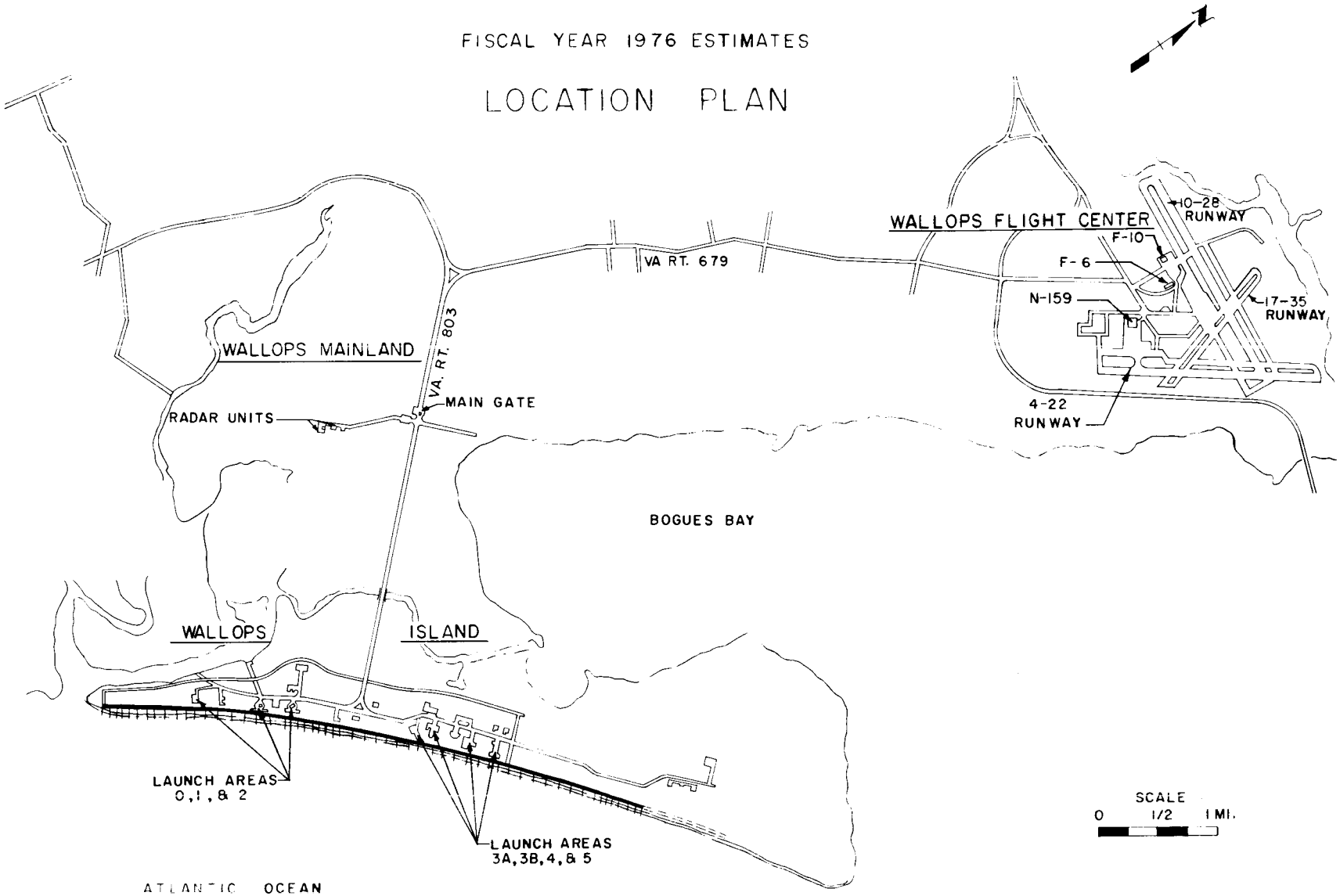
WALLOPS FLIGHT CENTER

FISCAL YEAR 1976 ESTIMATES

LOCATION PLAN



MAIN BASE
WALLOPS FLIGHT CENTER

RADAR SITES
WALLOPS FLIGHT CENTER

LAUNCHING AREA
WALLOPS FLIGHT CENTER

RESEARCH AND PROGRAM MANAGEMENT

FISCAL YEAR 1976 ESTIMATES

AMES RESEARCH CENTER

DESCRIPTION

The Ames Research Center is located on 421 acres at the southern end of San Francisco Bay on land contiguous to the U.S. Naval Air Station, Moffett Field, California. Certain facilities, such as the utilities and airfield runways, are used jointly by NASA and the Department of the Navy. Also housed at the Ames Research Center is the U.S. Army Air Mobility Research and Development Laboratory. Personnel from this laboratory work closely with Ames personnel on research of mutual interest. The capital investment at the Ames Research Center, including fixed assets in progress and contractor-held facilities at various locations, as of June 30, 1974, was $325,732,000.

MISSION

The programs at the Ames Research Center are directed toward research and development in the fields of aeronautics, space science, life science, and spacecraft technology, as well as application to National needs of the new science and technology growing out of the aerospace program. Specifically, the Center's major program responsibilities are concentrated in these areas: Short Haul Aircraft Technology, Simulation Techniques, Theoretical and Experimental Fluid Mechanics, Planetary Atmospheres, Airborne Sciences and Applications, and Aeronautical and Space Life Sciences. In addition to these major program responsibilities, the Center provides support for military programs, the Space Shuttle program, and various civil aviation projects.

The aeronautical research program at Ames is the largest research and development effort at the Center with emphasis placed on theoretical analysis as a basis for the prediction and understanding of fluid flows and on the development of V/STOL aircraft technology. The emphasis in theoretical fluid mechanics will lead to a much stronger role for the computer in the design of future aeronautical vehicles. The Illiac IV computer located at Ames is providing the expanded computational capability needed to support this research. The V/STOL research involves systematic analytical studies and wind tunnel investigations to define and evaluate concepts, simulation studies of the flight characteristics of the concept using flight simulators, and finally, verification with flight vehicles of the technological advances indicated in the research program. These flight vehicles are important to the future of both civil and military aviation, and their success will depend on efficient flight and upon the ability to land and take off quickly and precisely from small areas with safety and regularity under all weather conditions.

Research in Life Sciences is directed toward the search for life elsewhere in the universe, toward understanding the effects of space and aeronautical flight upon humans and other forms of life, and toward providing environments and equipment in spacecraft and aircraft that will permit crews and passengers to exist safely and perform effectively. A major portion of this effort is directed toward understanding the physiological changes that have been observed in manned space flight. The Center's search for extraterrestrial life focuses on such questions as: How did life originate? What chemical events occurred on primitive planets that culminated in organic matter necessary for the appearance of life? Under what extremes of planetary environments can life survive and grow? Answers to all of these questions are relevant to the broader questions of what life forms might be found on other planets and aid in developing spacecraft instrumentation for detecting and characterizing these life forms.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

	Functions	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
			(Thousands of Dollars)			
I.	Personnel and Related Costs....	$37,632	$39,497	$39,742	$40,315	$10,363
II.	Travel.....	889	899	815	878	289
III.	Facilities Services	4,625	5,247	5,345	5,618	1,403
IV.	Technical Services.	671	675	626	632	127
V.	Administrative Support.....	2,607	1,638	1,807	1,814	567
	Total, fund requirements.....	$46,424	$47,956	$48,335	$49,257	$12,749

Distribution of Permanent Positions by Program

Over two-thirds of Ames' permanent positions are used in direct support of the various R&D programs. The following table summarizes the actual and planned utilization of positions for direct program activity and for indirect support.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
Direct Positions					
Manned Space Flight					
Space shuttle.....	2	---	3	3	3
Space flight operations	103	116	112	119	119
Apollo.....	---	4	---	---	---
Space Sciences					
Physics and astronomy..	91	99	81	84	84
Lunar and planetary exploration.....	164	163	169	159	159
Applications					
Space applications.....	68	47	51	51	51
Aeronautics and Space Technology					
Aeronautical research and technology.....	570	637	564	564	564
Space and nuclear research technology..	210	218	210	210	210
Technology Utilization...	7	7	7	7	7
Subtotal, direct positions.....	1,215	1,291	1,197	1,197	1,197
Indirect Positions					
Director and staff.....	34	32	34	34	34
Administrative support...	235	260	235	235	235
Research and development support.....	217	117	210	210	210
Subtotal, indirect positions.....	486	409	479	479	479
Total, permanent positions.	1,701	1,700	1,676	1,676	1,676

PERSONNEL AND RELATED COSTS

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
I. PERSONNEL AND RELATED COSTS.....	$37,632	$39,497	$39,742	$40,315	$10,363
Basis of Fund Requirements					
A. Compensation and Benefits:					
1. Compensation:					
a. Permanent positions	$33,478	$35,189	$35,258	$35,754	$9,040
b. Nonpermanent positions.....	541	605	547	501	220
c. Reimbursable details	115	101	190	225	72
d. Overtime and other compensation.....	352	323	373	376	115
Subtotal, Compensation	$34,486	$36,318	$36,368	$36,856	$9,447
2. Benefits:	$2,912	$3,021	$3,140	$3,225	$810
Subtotal, Compensation and Benefits.....	$37,398	$39,239	$39,508	$40,081	$10,257
B. Supporting Costs:					
1. Transfer of personnel.	$58	$98	$58	$58	$35
2. Personnel training....	176	160	176	176	71
Subtotal, Supporting Costs.....	$234	$258	$234	$234	$106
Total, Personnel and Related Costs.....	$37,632	$39,497	$39,742	$40,315	$10,363
1. Compensation	$34,486	$36,218	$36,368	$36,856	$9,447
a. Permanent positions	$33,478	$35,189	$35,258	$35,754	$9,040

The difference between the 1975 budget estimate and the current estimate for 1975 is the cost of the October 1974 pay raise. This was partially offset by the savings from the reduction in manpower from 1,700 to 1,679.

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The increase in 1976 is primarily the full year net cost of these actions.

Basis of Cost for Permanent Positions

In 1976 the cost of permanent positions will be $35,754 an increase of $496 from 1975. This increase results as follows:

Cost of permanent positions in 1975.....		$35,258
Cost increases:.....		$+1,375
Within grade advances and career development		
Full year effect of 1975 actions.....	$+204	
Partial year effect of 1976 actions.....	+336	
Full year effect of October 1974 pay raise...	+560	
Additional extra day.....	+275	
Cost decreases:.....		$-879
Full year effect of 1975 manpower reductions	$-354	
Turnover savings		
Full year effect of 1975 actions.....	-136	
Partial year effect of 1976 actions.....	-389	
Cost of permanent positions in 1976.....		$35,754

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Dollars in Thousands)				
b. Nonpermanent positions					
1. Cost.....	$541	$605	$547	$501	$220
2. Number of manyears	84	91	82	77	34

The 1976 program includes 77 manyears to support the following programs:

Distribution of Nonpermanent Manyears by Program

	Manyears
College cooperative training.....	18
Summer employment.....	7
Youth opportunity.....	31
Other temporary employment.....	21
Total.....	77

The current estimate for 1975 is decreased from the 1975 budget estimate primarily due to a reduction in the level of summer employees from that planned in the 1975 budget. The 1976 estimate reflects the full year effect of reductions made in 1975.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
c. Reimbursable details..	$115	$101	$190	$225	$72

Reimbursable details include 7 military officers and 5 civilians. The current estimate for 1975 shows an increase over the 1975 budget estimate for the addition of five civilian detailees from the General Services Administration who will do computer programming. This increase is offset by a reduction in contracted programming effort in Technical services for Automatic Data Processing.

The 1976 increase reflects the full year cost of reimbursing GSA.

d. Overtime and other compensation.....	$352	$323	$373	$376	$115

Overtime and night differential is used primarily for off-shift operation of major wind tunnel facilities such as the Unitary Plan Wind Tunnel System, the 40 by 80-Foot Wind Tunnel, and the 6 by 6-foot Supersonic Wind Tunnel. The current estimate for 1975 is greater than the 1975 budget estimate to reflect the full year cost of large 1974 Wage Grade pay increases, and the partial year impact of the October 1974 General Schedule pay increase.

The 1976 estimate reflects the full year cost of these pay raises.

2. Benefits	$2,912	$3,021	$3,140	$3,225	$810

The following table indicates the cost of personnel benefits by major categories:

Category of Cost					
Contribution to the Civil Service Retirement Fund....	$2,341	$2,475	$2,475	$2,521	$629
Contribution for employee life insurance.....	119	129	122	123	31
Contribution for employee health insurance.....	407	336	510	553	137
FICA.....	23	64	20	14	8
Incentive awards.....	12	17	13	14	5
Severance pay.....	10	---	---	---	---
Total.....	$2,912	$3,021	$3,140	$3,225	$810

The current estimate for 1975 has increased over the 1975 budget due to the large increase in the cost of health benefits premiums. In addition, the government's contribution to the Federal Health Benefits Program increased from 50% to 60%, effective January 1975.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
B. Supporting Costs	$234	$258	$234	$234	$106
1. Transfer of personnel.....	$58	$98	$58	$58	$35

Based on current turnover estimates, both the current 1975 and the 1976 request provide for 20 moves. The current estimate for 1975 reflects a reduction from the budget estimate.

2. Personnel training...	$176	$160	$176	$176	$71

Personnel training costs provide training with universities and colleges (50%); with technical institutes (30%); with the U. S. Civil Service Commission (5%) and through in-house contracts (15%).

The current estimate for 1975 reflects an increase over the 1975 budget estimate to reflect price increases. 1976 is planned at the 1975 level.

II. TRAVEL.....	$889	$899	$815	$878	$289

Approximately 70% of travel requirements are for program travel involving primary responsibilities in Aeronautics, Life Sciences, Planetary and Earth Science, Astronomy and Applications. Major emphasis is applied on programs such as the Short-Haul Aircraft, Simulation Sciences, Fluid Mechanics, Planetary and Earth Exploration, Airborne Science, and Life Science programs.

The current estimate for 1975 is reduced from the 1975 budget estimate to reflect the recent legislation limiting Federal travel expenses. Travel requirements for 1976 are estimated at the 1975 level and adjusted to take into account increased air fares.

Basis of Fund Requirements

Summary of Travel by Major Category

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
A. Program Travel.....	$573	$630	$585	$629	$207
B. Meetings and Technical Seminars.....	173	125	120	130	45
C. Administrative Travel...	143	144	110	119	37
Total, Travel.....	$889	$899	$815	$878	$289

FACILITIES SERVICES

III. FACILITIES SERVICES..	$4,625	$5,247	$5,345	$5,618	$1,403

Basis of Fund Requirements

Summary of Facilities Services

A. Maintenance and Related Services					
1. Maintenance, repair, and alteration of buildings and grounds.....	$694	$170	$207	$209	$12
2. Custodial services..	921	895	977	1,035	335
3. Maintenance of equipment.....	52	55	60	64	16
Subtotal.....	$1,667	$1,120	$1,244	$1,308	$363
B. Operation of Facilities					
1. Utilities.....	$2,634	$3,935	$3,935	$4,150	$1,000
2. Supplies and equipment.....	324	192	166	160	40
Subtotal.....	$2,958	$4,127	$4,101	$4,310	$1,040
Total, Facilities Services.....	$4,625	$5,247	$5,345	$5,618	$1,403

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
A. Maintenance and Related Services.....	$1,667	$1,120	$1,244	$1,308	$320
1. Maintenance, repair, and alteration of buildings and grounds.....	$694	$170	$207	$209	$12

Building maintenance and repair expenditures cover seven institutional buildings having 251,000 square feet and containing no special purpose equipment other than normal heating and ventilating systems. The year-round requirement for landscaping care requires six manyears of effort for 421.4 acres. The 1974 level reflects one-time repairs for roads, walks, aircraft taxiway, as well as recurring roofing, painting, and electrical repairs.

The current estimate for 1975 reflects an increase over the budget estimate to accommodate wage and price increases. The 1976 program will be maintained at the 1975 level.

2. Custodial services	$921	$895	$977	$1,035	$335

Security, fire protection, janitorial and pest control services encompass 69 buildings, 52 trailers, 13 NASA-owned aircraft, and supply and equipment inventories. Much of the latter is highly sensitive computer and research equipment.

The current estimate for 1975 reflects an increase over the 1975 budget estimate to accommodate wage increases. The further rise in 1976 reflects the full year cost of wage escalation.

3. Maintenance of equipment.....	$52	$55	$60	$64	$16

Maintenance of equipment is provided on an as-needed repair basis. Calls are made generally to local contractors either against Blanket Purchase Agreements or Purchase Orders with fixed labor rates plus current market price for parts. The increase in the current estimates for 1975 from the budget estimate reflects higher labor and material costs.

The 1976 increase reflects the full year cost of the price increases.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
B. Operation of Facilities.....	$2,958	$4,127	$4,101	$4,310	$1,040
1. Utilities.....	$2,634	$3,935	$3,935	$4,150	$1,000

Approximately 80% of electric power cost is consumed in the operation of high power demand research facilities such as the Unitary Plan Wind Tunnel System, the 40 by 80-Foot Wind Tunnel, the 3.5-Foot Hypersonic Tunnel, the 14-Foot Transonic Wind Tunnel and in the operation of simulators and smaller wind tunnels.

The 1976 increase results from rate increases based on escalating natural gas and fossil fuel costs by the California Public Utilities Commission, and the Pacific Gas & Electric Company.

2. Supplies and equipment.....	$324	$192	$166	$160	$40

1974 includes $149 for the purchase of automated drafting equipment associated with the Center's safety programs. The current estimates for 1975 and 1976 reflect an overall reduction in the level of supply and equipment purchases.

TECHNICAL SERVICES

IV. TECHNICAL SERVICES.....	$671	$675	$626	$632	$127

Basis of Fund Requirements

Summary of Technical Services

A. Automatic Data Processing					
1. Programming and operations services	$322	$385	$285	$278	$72
B. Engineering Services....	11	---	---	---	---
C. Scientific and Technical Information and Education Programs					
1. Educational/information programs.....	338	290	341	354	55
Total, Technical Services...	$671	$675	$626	$632	$127

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
A. Automatic Data Processing	$322	$385	$285	$278	$72

The current estimate for 1975 decreases from the 1975 budget estimate due to a phase-out of contracted computer programming. This effort is now performed by reimbursable detailees from the General Services Administration. 1976 reflects the full year savings of this realignment.

B. Engineering Services	$11	---	---	---	---
C. Scientific and Technical Information and Educational Programs	$338	$290	$341	$354	$55
1. Education/information programs.....	$338	$290	$341	$354	$55

The 1975 budget estimate assumed a reduction in the level of informational and educational programs. However, with the wide interest in the Pioneer program, these reductions were not realized.

The increased current estimate for 1975 reflects wage and price escalation with no increase to the 1974 level of effort. 1976 reflects the full year cost of these increases.

ADMINISTRATIVE SUPPORT

V. ADMINISTRATIVE SUPPORT...	$2,607	$1,638	$1,807	$1,814	$567

Basis of Fund Requirements

Summary of Administrative Support

A. Communications					
1. Leased lines and long distance tolls.....	$288	$303	$307	$314	$75
2. Local telephone service	362	365	413	419	105
3. Other communications..	---	34	---	---	---
Subtotal.....	$650	$702	$720	$733	$180

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
B. Administrative Printing	$71	$70	$71	$75	$20
C. Supplies, Materials and Equipment.....	$512	$200	$226	$211	$52
D. Transportation					
1. Center operations...	$45	$45	$51	$54	$19
2. Common carrier.....	239	35	37	39	13
Subtotal.....	$284	$80	$88	$93	$32
E. Administrative Support Services					
1. Installation support services.....	$927	$436	$517	$513	$133
2. Environmental health and occupational medicine.....	163	150	185	189	150
Subtotal.....	$1,090	$586	$702	$702	$283
Total, Administrative Support Services.....	$2,607	$1,638	$1,807	$1,814	$567
A. Communications.....	$650	$702	$720	$733	$180

The current estimate for 1975 is greater than shown in the 1975 budget estimate to accommodate rate increases. 1976 reflects the full year cost of these known increases.

B. Administrative Printing	$71	$70	$71	$75	$20

Printing and reproduction requirements during 1975 and 1976 are expected to continue at the 1974 level of effort. 1976 costs have been increased to provide for increased material costs and wage rate increases.

C. Supplies, Materials and Equipment.....	$512	$200	$226	$211	$52

The current estimate for 1975 has increased to reflect the replacement of food preparation equipment which is no longer deemed safe. The 1976 estimate includes a normal level of purchases for supplies, materials and equipment.

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	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
D. Transportation.....	$284	$80	$88	$93	$32

1974 included one-time costs for the transportation of high pressure storage bottles from NASA's Flight Research Center to Ames Research Center. The current estimate for 1975 reflects an increase from the budget estimate for motor pool operations related to labor rate and automotive parts price increases. The increase in 1976 reflects the full cost of these price increases.

E. Administrative Support Services.....	$1,090	$586	$702	$702	$283

The current estimate for 1975 exceeds the 1975 budget estimate due to a large unanticipated wage increase in the support contractor services for supply, warehousing, mail, and delivery services.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ORGANIZATION AND STAFFING CHART

AMES RESEARCH CENTER

CENTER TOTAL

	75	76
EXCEPTED	23	23
GS - 16	6	6
GS - 15	119	119
GS - 14	192	192
ALL OTHER GS	1083	1083
WAGE GRADE	253	253
TOTAL PERMANENT	1676	1676

DIRECTOR

	75	76
EXCEPTED	2	2
GS - 16	–	–
GS - 15	3	3
GS - 14	1	1
ALL OTHER GS	6	6
WAGE GRADE	–	–
TOTAL PERMANENT	12	12

PUBLIC AFFAIRS OFFICE

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	–	–
GS - 14	1	1
ALL OTHER GS	7	7
WAGE GRADE	–	–
TOTAL PERMANENT	8	8

PATENT COUNSEL

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	1	1
GS - 14	1	1
ALL OTHER GS	1	1
WAGE GRADE	–	–
TOTAL PERMANENT	3	3

HEALTH AND SAFETY OFFICE

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	–	–
GS - 14	1	1
ALL OTHER GS	4	4
WAGE GRADE	–	–
TOTAL PERMANENT	5	5

CHIEF COUNSEL

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	2	2
GS - 14	–	–
ALL OTHER GS	1	1
WAGE GRADE	–	–
TOTAL PERMANENT	3	3

EQUAL OPPORTUNITY PROGRAMS OFFICE

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	–	–
GS - 14	–	–
ALL OTHER GS	4	4
WAGE GRADE	–	–
TOTAL PERMANENT	4	4

DIRECTOR OF AERONAUTICS & FLIGHT SYSTEMS

	75	76
EXCEPTED	2	2
GS - 16	–	–
GS - 15	–	–
GS - 14	–	–
ALL OTHER GS	4	4
WAGE GRADE	–	–
TOTAL PERMANENT	6	6

DIRECTOR OF ASTRONAUTICS

	75	76
EXCEPTED	2	2
GS - 16	–	–
GS - 15	1	1
GS - 14	–	–
ALL OTHER GS	3	3
WAGE GRADE	–	–
TOTAL PERMANENT	6	6

DIRECTOR OF LIFE SCIENCES

	75	76
EXCEPTED	2	2
GS - 16	–	–
GS - 15	–	–
GS - 14	1	1
ALL OTHER GS	3	3
WAGE GRADE	–	–
TOTAL PERMANENT	6	6

DIRECTOR OF DEVELOPMENT

	75	76
EXCEPTED	2	2
GS - 16	1	1
GS - 15	–	–
GS - 14	1	1
ALL OTHER GS	2	2
WAGE GRADE	–	–
TOTAL PERMANENT	6	6

DIRECTOR OF RESEARCH SUPPORT

	75	76
EXCEPTED	1	1
GS - 16	–	–
GS - 15	2	2
GS - 14	–	–
ALL OTHER GS	4	4
WAGE GRADE	–	–
TOTAL PERMANENT	7	7

DIRECTOR OF ADMINISTRATION

	75	76
EXCEPTED	1	1
GS - 16	–	–
GS - 15	2	2
GS - 14	–	–
ALL OTHER GS	5	5
WAGE GRADE	–	–
TOTAL PERMANENT	8	8

AERONAUTICS DIVISION

	75	76
EXCEPTED	1	1
GS - 16	–	–
GS - 15	8	8
GS - 14	19	19
ALL OTHER GS	85	85
WAGE GRADE	34	34
TOTAL PERMANENT	127	127

FLIGHT SYSTEMS RESEARCH DIVISION

	75	76
EXCEPTED	1	1
GS - 16	1	1
GS - 15	13	13
GS - 14	24	24
ALL OTHER GS	74	74
WAGE GRADE	8	8
TOTAL PERMANENT	121	121

SIMULATION SCIENCES DIVISION

	75	76
EXCEPTED	–	–
GS - 16	1	1
GS - 15	3	3
GS - 14	9	9
ALL OTHER GS	31	31
WAGE GRADE	–	–
TOTAL PERMANENT	44	44

AIRCRAFT OPERATIONS DIVISION

	75	76
EXCEPTED	1	1
GS - 16	–	–
GS - 15	4	4
GS - 14	2	2
ALL OTHER GS	35	35
WAGE GRADE	17	17
TOTAL PERMANENT	59	59

RESEARCH AIRCRAFT PROJECT OFFICE

	75	76
EXCEPTED	–	–
GS - 16	1	1
GS - 15	4	4
GS - 14	6	6
ALL OTHER GS	18	18
WAGE GRADE	–	–
TOTAL PERMANENT	29	29

SPACE SCIENCE DIVISION

	75	76
EXCEPTED	1	1
GS - 16	–	–
GS - 15	15	15
GS - 14	21	21
ALL OTHER GS	71	71
WAGE GRADE	–	–
TOTAL PERMANENT	108	108

THERMO- AND GAS-DYNAMICS DIVISION

	75	76
EXCEPTED	1	1
GS - 16	–	–
GS - 15	16	16
GS - 14	21	21
ALL OTHER GS	103	103
WAGE GRADE	–	–
TOTAL PERMANENT	141	141

CHEMICAL RESEARCH PROJECTS OFFICE

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	1	1
GS - 14	2	2
ALL OTHER GS	15	15
WAGE GRADE	–	–
TOTAL PERMANENT	18	18

APPLICATIONS AIRCRAFT SUPPORT PROGRAM OFFICE

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	1	1
GS - 14	4	4
ALL OTHER GS	5	5
WAGE GRADE	–	–
TOTAL PERMANENT	10	10

BIOMEDICAL RESEARCH DIVISION

	75	76
EXCEPTED	1	1
GS - 16	–	–
GS - 15	4	4
GS - 14	6	6
ALL OTHER GS	21	21
WAGE GRADE	3	3
TOTAL PERMANENT	35	35

BIOTECHNOLOGY DIVISION

	75	76
EXCEPTED	–	–
GS - 16	1	1
GS - 15	3	3
GS - 14	9	9
ALL OTHER GS	32	32
WAGE GRADE	–	–
TOTAL PERMANENT	45	45

PLANETARY BIOLOGY DIVISION

	75	76
EXCEPTED	1	1
GS - 16	–	–
GS - 15	3	3
GS - 14	5	5
ALL OTHER GS	36	36
WAGE GRADE	–	–
TOTAL PERMANENT	45	45

FLIGHT EXPERIMENTS OFFICE

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	1	1
GS - 14	1	1
ALL OTHER GS	5	5
WAGE GRADE	–	–
TOTAL PERMANENT	7	7

PROJECT PIONEER

	75	76
EXCEPTED	1	1
GS - 16	–	–
GS - 15	6	6
GS - 14	14	14
ALL OTHER GS	37	37
WAGE GRADE	–	–
TOTAL PERMANENT	58	58

FLIGHT PROJECT DEVELOPMENT DIVISION

	75	76
EXCEPTED	1	1
GS - 16	–	–
GS - 15	5	5
GS - 14	12	12
ALL OTHER GS	27	27
WAGE GRADE	–	–
TOTAL PERMANENT	45	45

RELIABILITY AND QUALITY ASSURANCE OFFICE

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	1	1
GS - 14	–	–
ALL OTHER GS	4	4
WAGE GRADE	–	–
TOTAL PERMANENT	5	5

ADVANCED SPACE PROJECTS OFFICE

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	1	1
GS - 14	–	–
ALL OTHER GS	5	5
WAGE GRADE	–	–
TOTAL PERMANENT	6	6

COMPUTATION DIVISION

	75	76
EXCEPTED	1	1
GS - 16	–	–
GS - 15	–	–
GS - 14	4	4
ALL OTHER GS	58	58
WAGE GRADE	–	–
TOTAL PERMANENT	63	63

INSTITUTE FOR ADVANCED COMPUTATION

	75	76
EXCEPTED	1	1
GS - 16	–	–
GS - 15	3	3
GS - 14	1	1
ALL OTHER GS	7	7
WAGE GRADE	–	–
TOTAL PERMANENT	12	12

RESEARCH FACILITIES & INSTRUMENTATION DIVISION

	75	76
EXCEPTED	–	–
GS - 16	1	1
GS - 15	4	4
GS - 14	12	12
ALL OTHER GS	120	120
WAGE GRADE	48	48
TOTAL PERMANENT	185	185

TECHNICAL SERVICES DIVISION

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	1	1
GS - 14	–	–
ALL OTHER GS	59	59
WAGE GRADE	130	130
TOTAL PERMANENT	190	190

FINANCIAL MANAGEMENT DIVISION

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	1	1
GS - 14	–	–
ALL OTHER GS	36	36
WAGE GRADE	–	–
TOTAL PERMANENT	37	37

PERSONNEL DIVISION

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	1	1
GS - 14	1	1
ALL OTHER GS	33	33
WAGE GRADE	–	–
TOTAL PERMANENT	35	35

PROCUREMENT DIVISION

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	1	1
GS - 14	3	3
ALL OTHER GS	47	47
WAGE GRADE	–	–
TOTAL PERMANENT	51	51

SERVICES & SUPPLY DIVISION

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	–	–
GS - 14	1	1
ALL OTHER GS	26	26
WAGE GRADE	8	8
TOTAL PERMANENT	35	35

TECHNICAL INFORMATION DIVISION

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	–	–
GS - 14	1	1
ALL OTHER GS	32	32
WAGE GRADE	5	5
TOTAL PERMANENT	38	38

RESOURCES MANAGEMENT OFFICE

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	1	1
GS - 14	–	–
ALL OTHER GS	7	7
WAGE GRADE	–	–
TOTAL PERMANENT	8	8

TECHNOLOGY UTILIZATION OFFICE

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	–	–
GS - 14	2	2
ALL OTHER GS	2	2
WAGE GRADE	–	–
TOTAL PERMANENT	4	4

SYSTEMS STUDIES DIVISION

	75	76
EXCEPTED	–	–
GS - 16	–	–
GS - 15	7	7
GS - 14	6	6
ALL OTHER GS	28	28
WAGE GRADE	–	–
TOTAL PERMANENT	41	41

DECEMBER 1974

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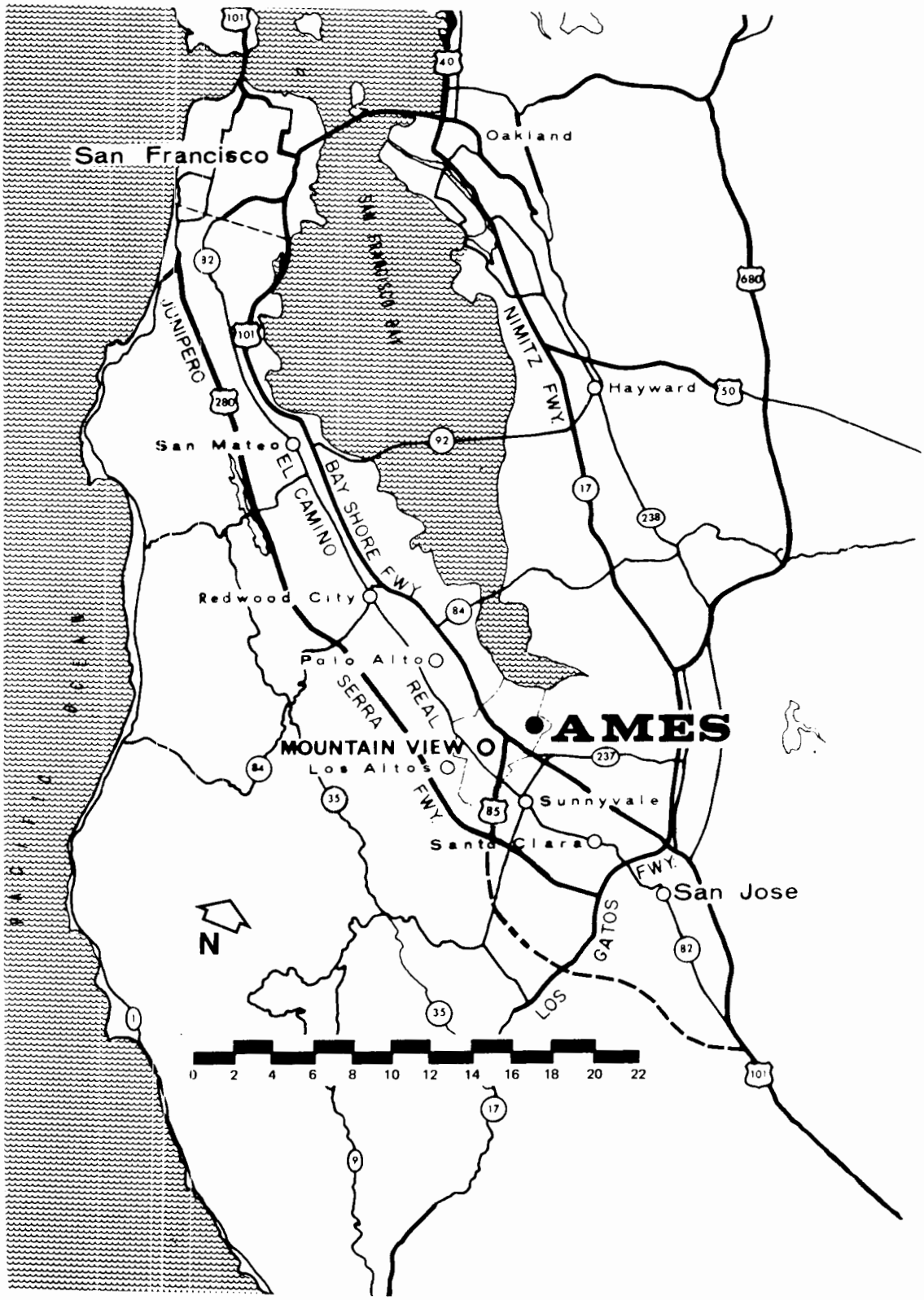
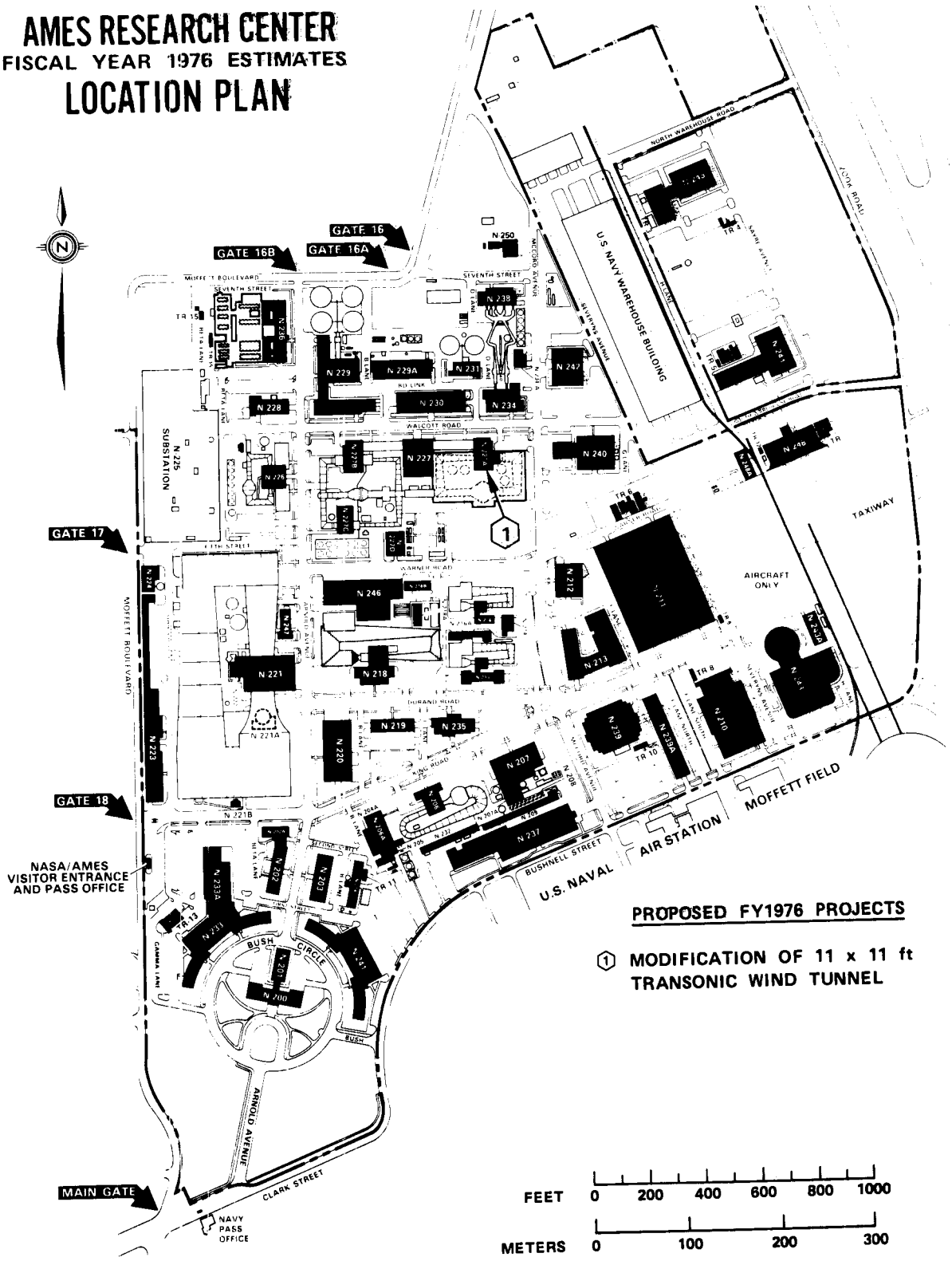
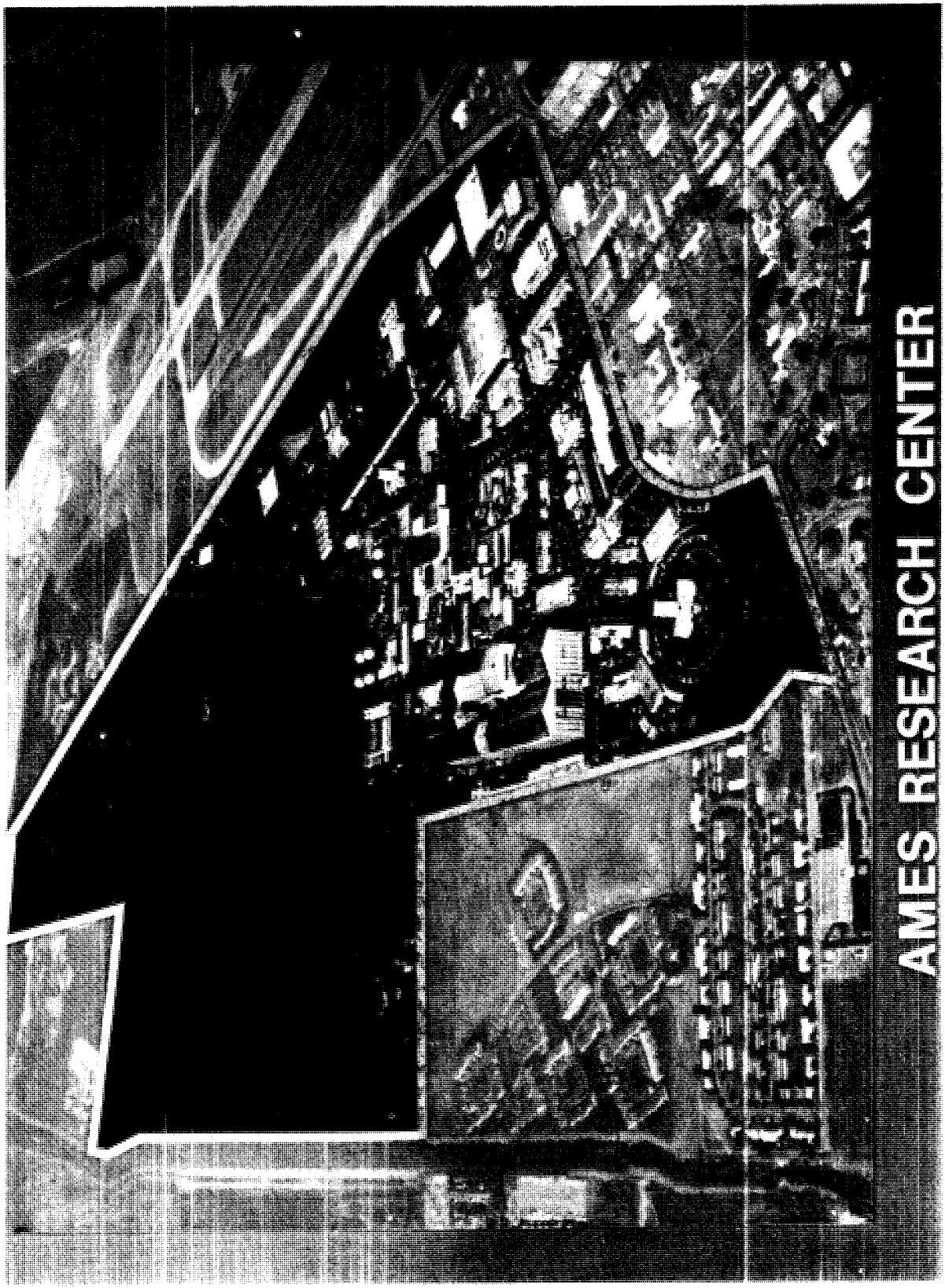
LOCATION MAP



AMES RESEARCH CENTER
FISCAL YEAR 1976 ESTIMATES
LOCATION PLAN





RPM 7-17

RESEARCH AND PROGRAM MANAGEMENT

FISCAL YEAR 1976 ESTIMATES

FLIGHT RESEARCH CENTER

DESCRIPTION

The Flight Research Center, Edwards, California, is 65 air miles northeast of Los Angeles. The Center is located at the north end of Edwards Air Force Base on 226 acres of land leased from the Air Force. Utilities are provided by the Air Force on a reimbursable basis. The Center is adjacent to Rogers Dry Lake, a 55-square mile area with a complex of runways varying in length from 5 to 11 miles.

The physical plant consists of an office-laboratory building with adjoining shops, a flight maintenance hangar and a calibration hangar, and a high temperature loads calibration facility. Auxiliary buildings include warehouses, and auxiliary power systems building, communications buildings, and an aircraft maintenance dock. The main station of the two station radar range operated by the Center is located on the third floor of the office-laboratory building. The total capital investment of the Flight Research Center, including fixed assets in progress, and contractor-held facilities at various locations, as of June 30, 1974, was $74,199,000.

MISSION

The primary mission of the Flight Research Center, established in 1947, is to maintain a position of preeminence in the conduct of flight research in support of military and civil national needs. This includes planning, conducting, analyzing and reporting of flight research for the purposes of verification of predicted characteristics and the identification of unexpected problems in actual flight.

The current and projected programs at this Center focus on the following types of activities: new design concepts and new flight regimes; flight safety and public acceptance of aircraft operations; applied control technology; improved cost-effective methods of conducting flight research; Space Shuttle development and testing; and energy program efforts.

The various aircraft are the most important of the facilities and special equipment for conducting programs at the Flight Research Center. The aircraft range from low-speed general aviation aircraft for control systems investigations to supersonic aircraft, such as the YF-12, used for various research investigations having application to both civil and military aviation. Special purpose vehicles such as the X-24B, F-8 Digital Fly-By-Wire aircraft,

and unmanned Remotely Piloted Research Vehicles, are contractor procured or developed in-house. Specialized laboratory facilities are available to complement the flight activities with proper preliminary research and testing. Simulation equipment is used to guide and assist in the performance of productive flight activities. A two station test range for radar tracking and data acquisition is operated to support the flight activity.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

Function	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Dollars in Thousands)				
I. Personnel and Related Costs....	$10,061	$10,454	$11,107	$11,346	$3,003
II. Travel.....	246	235	224	242	84
III. Facilities Services.....	1,391	1,364	1,426	1,609	1,500
IV. Technical Services.....	81	91	79	76	52
V. Administrative Support.....	460	348	337	441	268
Total, fund requirements...	$12,239	$12,492	$13,173	$13,714	$4,907

Distribution of Permanent Positions by Program

Over two thirds of Flight's permanent positions are used in direct support of the various R&D programs. The following table summarizes the actual and planned utilization of positions for direct program activity and for indirect support.

Direct Positions					
Manned Space Flight					
Space flight operations	1	9	1	1	1
Space Shuttle	5	---	40	88	88

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
Aeronautics and Space Technology					
Aeronautical research and technology.....	309	318	281	278	278
Space and nuclear research and technology.....	39	35	40	---	---
Tracking and Data Acquisition	30	27	28	28	28
Energy Program					
Energy technology applications.....	6	---	5	---	---
Technology Utilization	1	1	1	1	1
Subtotal, direct positions.....	391	390	396	396	396
Indirect Positions					
Director and Staff.....	18	18	17	17	17
Administrative support.	75	75	76	76	76
Subtotal, indirect positions.....	93	93	93	93	93
Total, permanent positions.....	484	483	489	489	489

PERSONNEL AND RELATED COSTS

I. PERSONNEL AND RELATED COSTS.....	$10,061	$10,454	$11,107	$11,346	$3,003

Basis of Fund Requirements

A. Compensation and Benefits:

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
1. Compensation:					
a. Permanent positions...	$8,780	$9,109	$9,535	$9,762	$2,541
b. Nonpermanent positions...	237	241	424	415	153
c. Reimbursable detailees..	110	153	128	132	39
d. Overtime and other compensation...	88	94	93	95	24
Subtotal, Compensation...	$9,215	$9,597	$10,180	$10,404	$2,757
2. Benefits.....	796	807	877	892	233
Subtotal, Compensation and Benefits....	$10,011	$10,404	$11,057	$11,296	$2,990
B. Supporting Costs:					
1. Transfer of personnel.....	$12	$10	$10	$10	$3
2. Personnel training.....	38	40	40	40	10
Subtotal, Supporting Costs.....	$50	$50	$50	$50	$13
Total, Personnel and Related Costs.....	$10,061	$10,454	$11,107	$11,346	$3,003
1. Compensation.....	$9,215	$9,597	$10,180	$10,404	$2,757
a. Permanent positions.....	$8,780	$9,109	$9,535	$9,762	$2,541

The current estimate for 1975 is increased from the 1975 budget estimate to reflect the cost of the October 1974 pay raise, plus the cost of the permanent ceiling increases of 6 positions. The increase in ceiling is required to support FRC's role in support of Shuttle Flight Tests.

The increase in 1976 is primarily the full year net cost of these actions.

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Basis of Cost of Permanent Positions

(Thousands of Dollars)

In 1976 the cost of permanent positions will be $9,762, an increase of $227 from 1975. The increase results as follows:

Cost of permanent positions in 1975.....		$9,535
Cost increases:		+395
Within grade advances and career development		
Full year effect of 1975 actions.....	+$ 93	
Partial year effect of 1976 actions.....	+ 92	
Full year effect of October 1974 pay raise.....	+ 125	
Additional extra day.....	+ 32	
Full year effect of 1975 new positions.....	+ 53	
Cost decreases:		
Turnover savings		-168
Full year effect of 1975 actions.....	-$ 91	
Partial year effect of 1976 actions.....	- 77	
Cost of permanent positions in 1976.....		$9,762

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Dollars in Thousands)				
b. Nonpermanent positions:					
1. Cost.....	$237	$241	$424	$415	$153
2. Number of manyears...	35	38	64	64	24

The 1976 program includes 64 manyears to support the following programs:

Distribution of Nonpermanent Manyears by Program

	Positions
College cooperative training.....	40
Opportunity programs.....	14
Summer employment.....	7
Other temporary employment.....	3
Total.....	64

The current estimate for 1975 increases from the 1975 budget estimate due to the October 1974 pay raise and an earlier than planned implementation of the college cooperative training program based on an increased availability of students in the job market. The program for 1976 is planned at essentially the same level as 1975.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
c. Reimbursable detailees..	$110	$153	$128	$132	$39

The services of military officers are utilized in FRC's programs where such assignments are of mutual benefit.

The current estimate for 1975 is decreased from the 1975 budget estimate as a result of the availability of only 9 military personnel with the skills required, rather than the 11 originally planned. The 1976 estimate reflects the full year cost of the 9 detailees.

d. Overtime and other compensation....	$88	$94	$93	$95	$24

Overtime is restricted to emergency repairs and work required beyond normal duty time. Requirements include overtime pay for personnel involved with flight launches, emergency repairs of equipment and facilities which occur outside normal working hours and completion of special projects and programs to meet specific deadlines.

The current estimate for 1975 was slightly reduced from the 1975 budget estimate as a result of the effort to reduce requirements and is offset by an increase for the October 1974 pay raise. The 1976 estimate continues overtime at approximately the same level, but the estimate increases slightly due to the full year effect of the October 1974 pay raise.

2. Benefits.....	$796	$807	$877	$892	$233

The following table indicates the cost of personnel benefits by major categories:

Category of Cost					
Contribution to the Service Retirement Fund.....	$624	$649	$694	$700	$182

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
Category of Cost (Cont'd)					
Contribution for employee life insurance.....	31	33	33	34	9
Contribution for employee health insurance.....	120	101	130	138	35
Contribution to FICA.....	5	9	8	8	4
Incentive awards...	5	10	7	7	2
Other personnel benefits.....	---	5	5	5	1
Severance pay.....	11	---	---	---	---
Total.....	$796	$807	$877	$892	$233

The current estimate for 1975 is increased over the 1975 budget estimate due to the increase of six permanent positions, the October 1974 pay raise and the higher Government contribution for health insurance. The 1976 increase provides for the full year cost of these actions.

B. Supporting Costs

1. Transfer of personnel.....	$12	$10	$10	$10	$3
2. Personnel training.....	38	40	40	40	10
Total.....	$50	$50	$50	$50	$13

Supporting costs include those expenses associated with movement of employees to new duty stations. This estimate provides for the movement of approximately 9 personnel, which is the average for prior years.

It also includes the cost for tuition, fees and related costs for training at colleges, universities, technical institutes and other institutions. It is estimated that this activity in 1976 will continue at the current level.

II. TRAVEL.....	$246	$235	$224	$242	$84

The major portion of the travel will be support of the Aeronautics program, with the Space Shuttle requiring a larger share in 1975 and 1976.

The 1975 current estimate has been realigned by subfunction to reflect 1974 experience and the total has been reduced consistent with the recent legislation curtailing federal travel expenses.

The 1976 travel is continued at the 1975 level and takes into account increased air fares.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
A. Program Related Travel.....	$121	$103	$121	$132	$45
B. Meetings and Technical Seminars.....	99	106	79	84	27
C. Administrative Travel.....	26	26	24	26	12
Total, Travel.....	$246	$235	$224	$242	$84
III. FACILITIES SERVICES..	$1,391	$1,364	$1,426	$1,609	$1,500
A. Maintenance and Related Services					
1. Maintenance of buildings and grounds.....	$824	$681	$769	$904	$896
2. Maintenance of equipment.....	91	90	90	90	22
3. Custodial services.....	307	320	387	413	400
Subtotal.....	$1,222	$1,091	$1,246	$1,407	$1,318
B. Operation of Facilities					
1. Utilities.....	$120	$228	$152	$164	$164
2. Supplies and equipment.....	49	45	28	38	18
Subtotal.....	$169	$273	$180	$202	$182
Total, Facilities Services	$1,391	$1,364	$1,426	$1,609	$1,500

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
A. Maintenance and Related Services...	$1,222	$1,091	$1,246	$1,407	$1,318
1. Maintenance of buildings and grounds.....	$824	$681	$769	$904	$896

The funding for maintenance of buildings and grounds is used to repair and maintain 374,000 square feet of building space, 21 permanent structures, utility plants and systems, 219 acres of improved and unimproved grounds, and other real property items.

The current estimate for 1975 increased from the 1975 budget estimate as a result of support service contractor wage and material cost escalation. The 1976 increase is attributable to the full year effect of these increased costs. The transition period reflects twelve months funding consistent with the Center's normal obligation practice.

2. Maintenance of equipment.....	$91	$90	$90	$90	$22

This estimate is based on maintaining approximately 300 pieces of office, shop and laboratory equipment through on call service maintenance contracts. The 1976 estimate reflects the continuation of this activity at current levels.

3. Custodial services	$307	$320	$387	$413	$400

The estimate for janitorial services will provide funds to clean 207,000 square feet of floor space and adequate security protection services of buildings and grounds.

The current estimate for 1975 increased from the 1975 Budget Estimate as a result of support service contractor wage and material cost escalation. The 1976 increase is attributable to the full year cost of this escalation. The transition period reflects the Center's normal obligation practice.

B. Operation of Facilities.....	$169	$273	$180	$202	$182
1. Utilities.....	$120	$228	$152	$164	$164

Electricity and water are obtained from the Air Force and natural gas is obtained from a commerical source.

The current estimate for 1975 decreased from the 1975 budget estimate to reflect a reduction in estimated utility usage consistent with continuing measures to conserve energy. The 1975 current estimate is reflective of current utility rates. In 1976 utility consumption is planned at the same level as 1975. A full twelve month funding is reflected in the transition period.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
2. Supplies and equipment.....	$49	$45	$28	$38	$18

The current estimate for 1975 decreased from the 1975 budget estimate due to a deferral of equipment purchases. The increase in 1976 reflects the purchase of the deferred procurement and the higher cost of fuel and lubricants, electronic and general service materials.

IV. TECHNICAL SERVICES...	$81	$91	$79	$76	$52

Basis of Fund Requirements

Summary of Technical Services

A. Automatic Data Processing					
1. Programming and operations services.....	$16	$16	$16	$16	$16
2 Equipment.....	2	3	---	---	---
Subtotal.....	$18	$19	$16	$16	$16
B. Engineering Services	$6	$10	$6	$6	$2
C. Scientific and Technical Information and Educational Programs					
1. Operation of NASA technical libraries.....	$12	$12	$12	$12	$3
2. Educational/Information programs	28	33	28	28	22

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
C. Scientific and Technical Information and Educational Programs (Cont'd)					
3. Scientific and technical information....	$17	$17	$17	$14	$9
Subtotal.....	$57	$62	$57	$54	$34
Total, Technical Services	$81	$91	$79	$76	$52
A. Automatic Data Processing.....	$18	$19	$16	$16	$16

The current estimate for 1975 decreased from the 1975 budget estimate to reflect the cancellation of the lease of programmable typewriters subsequent to the submission of the 1975 budget. The transition period reflects a twelve month funding plan.

B. Engineering Services..	$6	$10	$6	$6	$2

Funding in this area is in support of the Center facilities management function. Engineering services are required primarily for drafting and design work which exceed in-house capability, engineering consulting services, and civil engineering facility design approvals.

The current estimate for 1975 decreases from the budget estimate to reflect current estimated needs.

C. Scientific and Technical Information and Educational Programs	$57	$62	$57	$54	$34
1. Operation of NASA technical libraries.....	$12	$12	$12	$12	$3

Funding in this area is required to procure scientific and technical books and periodicals in support of research programs; technical and administrative publications; various other publications of scientific value and approximately 300 subscriptions for periodicals. The 1976 budget reflects the continuance of this activity at the current level.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
2. Educational/ information programs.....	$28	$33	$28	$28	$22

The educational/information programs provide for the gathering and dissemination of information about the center's programs to the mass communications media, the general public, and to the educational community at the elementry and secondary levels.

The current estimate for 1975 decreased from the 1975 budget estimate and reflects the decision to cancel the publication of certain brochures.

The 1976 budget reflects the continuance of this activity at the current level. The transition period reflects the centers normal obligation pattern.

3. Scientific and technical information....	$17	$17	$17	$14	$9

Funding in this area will allow the procurement of documentation, publication services and photographic services.

The reduction in 1976 is the result of reduced contracted effort.

V. ADMINISTRATIVE SUPPORT.....	$460	$348	$337	$441	$268

Basis of Fund Requirements

Summary of Administrative Support

A. Communications

1. Leased lines and long distance tolls.....	$48	$58	$45	$52	$52
2. Local telephone service.....	61	62	62	62	62
3. Other communications.....	3	3	3	3	3
Subtotal.....	$112	$123	$110	$117	$117

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	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
B. Administrative Printing.....	$16	$20	$16	$20	$5
C. Supplies, Materials and Equipment.....	$217	$96	$106	$186	$63
D. Transportation					
1. Center operations	$89	$79	$79	$88	$68
2. Common carrier...	16	20	16	20	5
Subtotal.....	$105	$99	$95	$108	$73
E. Administrative Support Services...	$10	$10	$10	$10	$10
Total, Administrative Support.....	$460	$348	$337	$441	$268
A. Communications.....	$112	$123	$110	$117	$117

This category provides funding to support three Federal Telephone System circuits, local telephone service, and the rental of equipment for the teletype/crypto system.

The current estimate for 1975 decreased from the 1975 budget estimate to reflect actual rates experienced during the prior fiscal year. The increase in the 1976 estimate is due to additional support required for the Shuttle Program activity. The transition period represents twelve months funding.

B. Administrative Printing.....	$16	$20	$16	$20	$5

Administrative printing includes the contractual publication of information and materials such as in-house organ weekly and the related composition and binding operations.

The current estimate for 1975 decreased from the 1975 budget estimate due to the determination to defer printing of certain publications for an additional year. The increase in 1976 provides for the printing of those publications.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
C. Supplies, Materials and Equipment.....	$217	$96	$106	$186	$63

Administrative supplies, materials and equipment include those items of a general nature which service the entire installation. The majority of the funds are budgeted for office supplies and equipment to support administration. The 1974 amount includes a significant replacement of office furniture which is not required annually.

The current estimate for 1975 increased from the 1975 budget estimate to reflect current pricing levels. The 1976 budget increase is primarily due to the replacement of outmoded reproduction equipment and higher cost of supplies, materials, and equipment.

D. Transportation.....	$105	$99	$95	$108	$73

Estimates in this area are to fund the costs of government bills of lading issued to common carriers to move freight by rail, truck, water, air and to fund shipments provided by United Parcel Service. Contractor maintenance of the Center's general purpose vehicles is included herein.

The current estimate for 1975 decreased from the budget estimate to reflect lower cost of transporting trailers from the closed AEC facility at Jackass Flats, NV to FRC. The 1976 increase is the result of support service contractor wage and price escalation.

E. Administrative Support Services...	$10	$10	$10	$10	$10

Administrative support services provides for the Center's pilots' physical examiniations. The transition period reflects a full twelve months funding.

FY 1976 BUDGET ESTIMATES

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ORGANIZATION AND STAFFING CHART

FLIGHT RESEARCH CENTER

STAFFING SUMMARY	CY	BY
Excepted	8	8
GS-16	3	3
GS-15	20	20
GS-14	35	35
All Other GS	421	421
Wage Board	2	2
Total Permanent	489	489

OFFICE OF THE DIRECTOR	CY	BY
Excepted	3	3
GS-16	-	-
GS-15	5	5
GS-14	1	1
All Other GS	30	30
Wage Board	-	-
Total Permanent	39	39

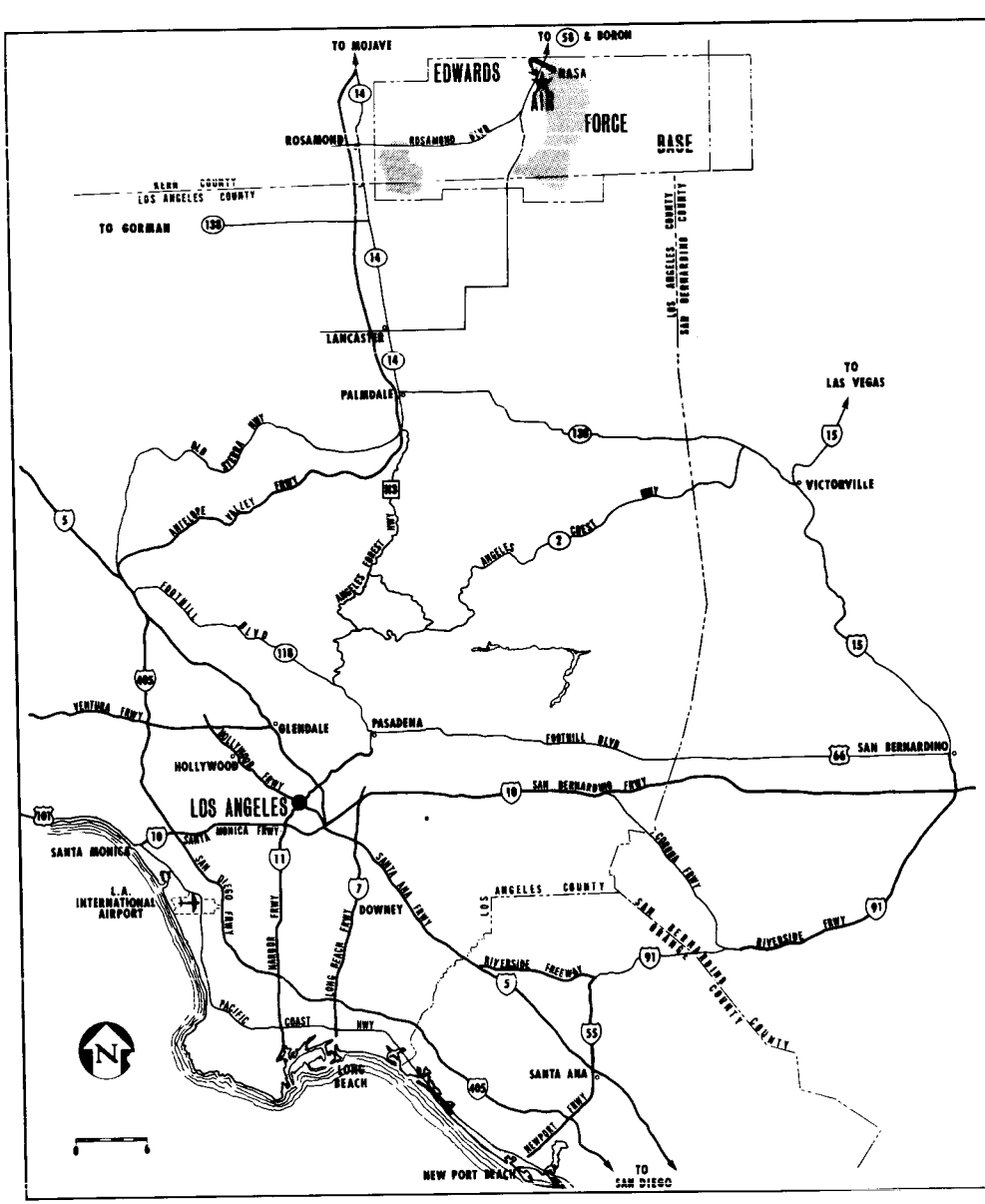
RESEARCH DIVISION	CY	BY
Excepted	2	2
GS-16	2	2
GS-15	5	5
GS-14	18	18
All Other GS	71	71
Wage Board	-	-
Total Permanent	98	98

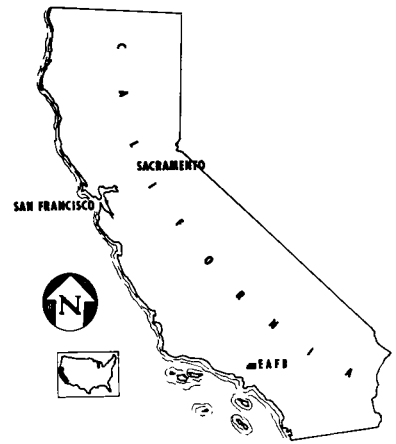
OPERATIONS DIRECTORATE	CY	BY
Excepted	2	2
GS-16	1	1
GS-15	6	6
GS-14	5	5
All Other GS	140	140
Wage Board	-	-
Total Permanent	154	154

DATA SYSTEMS DIVISION	CY	BY
Excepted	1	1
GS-16	-	-
GS-15	2	2
GS-14	7	7
All Other GS	123	123
Wage Board	-	-
Total Permanent	133	133

ADMINISTRATIVE DIRECTORATE	CY	BY
Excepted	-	-
GS-16	-	-
GS-15	2	2
GS-14	4	4
All Other GS	57	57
Wage Board	2	2
Total Permanent	65	65

FLIGHT RESEARCH CENTER
FISCAL YEAR 1976 ESTIMATES
VICINITY MAP





KEY PLAN

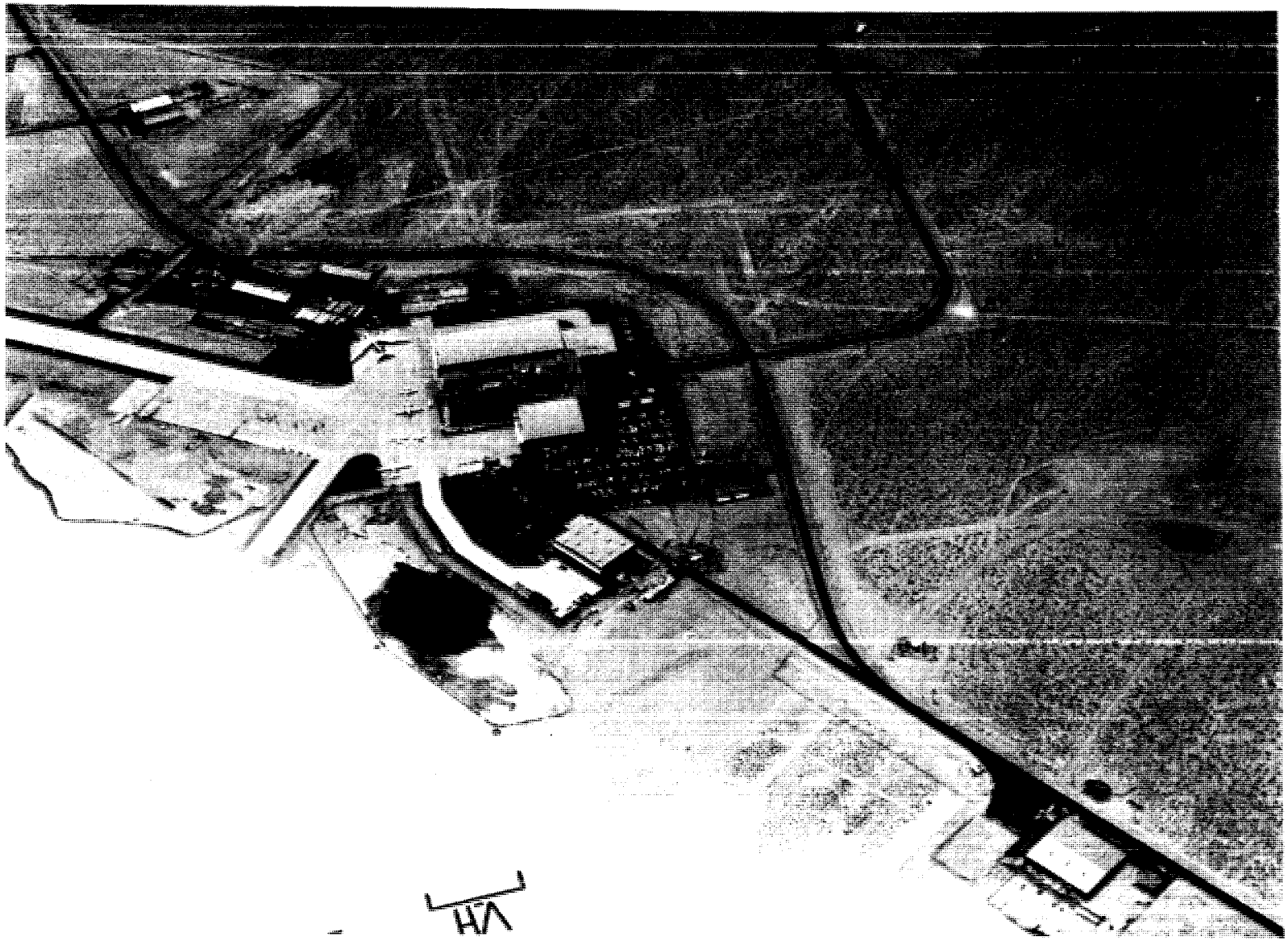
FLIGHT RESEARCH CENTER
FISCAL YEAR 1976 ESTIMATE
LOCATION PLAN

1 LABORATORY BUILDING (4800)
2 AIRCRAFT CONSTRUCTION AND MODIFICATION HANGAR (4801)
3 MAIN HANGAR (4802)
4 AIRCRAFT TIRE REPAIR SHOP (4803)
5 TRAILER PARK AND MODULAR BUILDINGS
6 BOILER HOUSE (4886)
7 SHOPS (AGE, MODEL, BATTERY, GARAGE)(4806)
8 STORAGE BUILDING (4807A)
9 PHYSIOLOGY STRESS LAB (4807B)
10 WAREHOUSE № 2 (4808)
11 WAREHOUSE № 3 (4809)
12 WAREHOUSE № 4 (4810)
13 HIGH TEMPERATURE LOAD CALIBRATION FACILITY (4820)
14 PAINT SPRAY BUILDING (4821)
15 PAINT STORAGE BUILDING (4822)
16 COMMUNICATIONS BUILDING (4824)
17 MAINTENANCE DOCK (4826)
18 FIBERGLASS SPRAY BOOTH (4830)
19 WAREHOUSE № 5 (4831)
20 RADAR BUILDING (4870)
21 100FT TOWER, BORESIGHT TARGET ASSEMBLY AND EQUIPMENT (4887)
22 CENTRAL STANDBY ELECTRICAL POWER FACILITY (4889)
23 STORAGE BUILDING (4804)
24 AIRCRAFT SERVICING DOCK (4823)
25 FPS-16 RADAR FACILITY (4982)
26 WAREHOUSE №6 (4827)

PROPOSED FACILITIES

Ⓐ ADDITION TO FLIGHT CONTRCL ROOM

FLIGHT RESEARCH CENTER
FISCAL YEAR 1976 ESTIMATES



LANGLEY RESEARCH CENTER

DESCRIPTION

The Langley Research Center, Hampton, Virginia, is located approximately 100 air miles south of Washington, D.C. The Center occupies 772 acres of Government-owned land, divided into two areas by the runway facilities of Langley Air Force Base. The West Area consists of 749 acres, 430 owned by NASA and 319 under permit from the Air Force. The East Area comprises 23 acres under Air Force permit. Runways, some utilities, and certain other facilities are used jointly by NASA and the Air Force. In addition, there are 110 acres of NASA-owned land located in the City of Newport News, Virginia, and 3,276 acres under permit from the Air Force. The total acreage presently owned, under permit, or leased, is 4,158. The total capital investment at the Langley Research Center, including fixed assets in progress, and contractor-held facilities at various locations as of June 30, 1974, was $488,129,000.

MISSION

The Langley Research Center is responsible for complex research programs in aeronautics, space science, electronics, and structures. Major activities at Langley include management of the Viking project; development of aeronautical and space vehicles concepts; consultation and research aid to many Governmental agencies, industry, and universities; and release of research results to scientific and technical communities.

A substantial percentage of Langley's research work is in the development of advanced concepts and technology for future aircraft, with particular emphasis on environmental effects, performance, range, safety, and economy. Examples of this research are projects involving a supercritical wing, composite structural materials, and automatic flight control systems. Work continues in the development of technology for helicopters and avionic systems for reliable operations in terminal areas of the future.

Vigorous efforts continue to improve supersonic flight capabilities for both transport and military aircraft. Configurations under study attempt to maximize the favorable interference effects of aerodynamics and propulsion. The advanced research program is also aimed at the technology required for aircraft performance in the hypersonic speed range.

Langley works with the general aviation industry to help solve problems concerning aircraft design, to generate and consolidate data and techniques for new designs and load requirements, and to develop new devices to improve flight operations. Simplified, low cost electronic systems that will aid stability, navigation, and collision warning are also being developed.

Materials and structural systems are being evolved to work effeciently in critical environments, practical methods of cooling high-heat areas of aircraft surfaces are being studied, and the technology of hypersonic ramjet engines is being developed.

Other aeronautical research at Langley focuses on critical problems of aircraft engine noise, alleviation of trailing vortices, increased traction and control of landing gear, and improved physical comfort in aircraft.

Langley has complete responsibility for Viking, a spacecraft that will orbit and land on Mars in 1976. Viking will permit a detailed study of geophysics, atmospheric characteristics and surface properties of Mars and obtain data relevant to the evidence of life forms on the planet. Langley was selected to manage the Viking project because of the Center's experience and contributions to advanced technology in the fields of atmospheric entry heat shielding, space vehicle recovery systems, rocket propulsion, instrumentation, and electronics.

Langley supports unmanned spacecraft programs by the development of experiments and sensors, communications, and data handling systems. These programs include the remote sensing of water and air pollution, survey of earth resources, and the application of space technology to measure various physical phenomena ranging from ocean wave heights to upper atmospheric composition.

Scout launch vehicle operations and improvements in national and international satellite experiments are long-time Langley responsibilities.

Ground-based research programs at Langley include the investigation of effects on space vehicles such as heat, vacuum, noise, and meteoroids; the development and use of advanced composite and polymeric materials for structures and thermal control systems; and improved technology for antenna and power amplifiers, batteries, high-capacity computer memories, logic circuits, and other advanced microelectronic devices.

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SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

	Functions	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
			(Dollars in Thousands)			
I.	Personnel and Related Costs.....	$69,967	$72,601	$74,698	$76,036	$19,494
II.	Travel.....	1,903	1,910	1,980	2,267	681
III.	Facilities Services.	6,345	5,895	6,421	7,172	1,890
IV.	Technical Services..	1,549	1,208	1,171	1,202	380
V.	Administrative Support.....	3,995	3,375	3,834	4,033	942
	Total, fund requirements.....	$83,759	$84,989	$88,104	$90,710	$23,387

Distribution of Permanent Positions by Program

Over two-thirds of Langley's permanent positions are used in direct support of the various R&D programs. The following table summarizes the actual and planned utilization of positions for direct program activity and for indirect support.

Direct Positions					
Manned Space Flight					
Space flight operations	5	62	12	8	8
Apollo.....	2	---	---	---	---
Space Science					
Physics and astronomy..	125	55	90	26	26
Lunar and planetary exploration.....	264	277	222	167	167
Launch vehicle procurement.....	50	54	62	62	62
Applications					
Space applications.....	195	227	217	253	253

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
Aeronautics and Space Technology					
Aeronautical research and technology.....	1,450	1,439	1,459	1,499	1,499
Space and nuclear research and technology.....	511	489	536	585	585
Tracking and Data Acquisition.....	9	13	---	---	---
Technology Utilization...	8	14	17	15	15
Subtotal, direct positions.....	2,619	2,630	2,615	2,615	2,615
Indirect Positions					
Director and staff.....	10	10	16	16	16
Administrative support.	420	418	388	388	388
Research and development support..	326	313	313	313	313
Subtotal, indirect positions.....	756	741	717	717	717
Total, permanent positions.....	3,375	3,371	3,332	3,332	3,332

PERSONNEL

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
I. PERSONNEL.....	$69,967	$72,601	$74,698	$76,036	$19,494

Basis of Fund Requirements

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
A. Compensation and Benefits:					
1. Compensation:					
a. Permanent positions..	$62,528	$64,770	$66,336	$67,395	$17,169
b. Nonpermanent positions..	801	976	1,184	1,180	413
c. Reimbursable details....	---	---	47	53	13
d. Overtime and other compensation..	566	546	602	618	155
Subtotal, Compensation..	$63,895	$66,292	$68,169	$69,246	$17,750
2. Benefits.....	$5,557	$5,794	$6,014	$6,275	$1,615
Subtotal, Compensation and Benefits	$69,452	$72,086	$74,183	$75,521	$19,365
B. Supporting Costs:					
1. Transfer of personnel.....	$96	$40	$96	$96	$23
2. Personnel training.....	419	475	419	419	106
Subtotal, Supporting Costs..	$515	$515	$515	$515	$129
Total, Personnel and Related Costs.....	$69,967	$72,601	$74,698	$76,036	$19,494
1. Compensation.....	$63,895	$66,292	$68,169	$69,246	$17,750
a. Permanent positions.....	62,528	64,770	66,336	67,395	17,169

The difference between the 1975 budget estimate and the current estimate for 1975 is the cost of the October 1974 pay raise. This is partially offset by the savings resulting from the reduction in manpower from 3,371 to 3,332. The increase in 1976 is primarily the full year net cost of these actions.

Basis of Cost for Permanent Positions
(Thousands of Dollars)

In 1976 the cost of permanent positions will be $67,395 an increase of $1,059 from 1975. This increase results as follows:

Cost of permanent positions in 1975		$66,336
Cost increases:		+2,626
Within grade advances and career development		
Full year effect of 1975 actions	+$565	
Partial year effect of 1976 actions	+793	
Full year effect of October 1974 pay raise	+1,008	
Additional extra day	+260	
Cost decreases:		-$1,567
Full year effect of 1975 manpower reductions	-$286	
Turnover savings		
Full year effect of 1975 actions	-668	
Partial year effect of 1976 actions	-613	
Cost of permanent positions in 1976		$67,395

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Dollars in Thousands)			
b. Nonpermanent positions:					
1. Cost	$801	$976	$1,184	$1,180	$413
2. Number of manyears	123	162	168	170	60

The 1976 program includes 170 manyears to support the following programs:

Distribution of Nonpermanent Manyears by Program

Program	Manyears
College cooperative training	84
Summer employment	24
Opportunity programs	47
Other temporary employment	15
Total	170

The current estimate for 1975 has increased from the 1975 budget estimates due to the October 1974 pay raise and increased minority and female participation in the college cooperative training program. The program for 1976 is planned at essentially the 1975 level.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
c. Reimbursable details.....	---	---	$47	$53	$13

The current estimate for 1975 includes funding for the services of two experienced Army test pilots who will participate in experimental flight programs including spin tests on military aircraft and flights of terminal configured vehicles. This requirement was not included in the 1975 budget. 1976 reflects the full year cost of these pilots.

d. Overtime and other compensation.....	$566	$546	$602	$618	$155

The current estimate for 1975 allows for general schedule and wage grade increases which were not included in the 1975 budget estimate. The 1976 estimate reflects the full year cost of these pay raises.

2. Benefits.....	$5,557	$5,794	$6,014	$6,275	$1,615

The distribution of these costs by major categories is as follows:

Category of Cost					
Contribution to the Civil Service Retirement Fund..	$4,394	$4,664	$4,691	$4,765	$1,214
Contribution for employee life insurance.....	237	273	240	274	79
Contribution for employee health insurance.....	816	714	1,014	1,176	307
Contribution to FICA.....	17	13	28	28	7
Incentive awards...	30	35	30	30	8
Other personnel benefits.....	1	95	2	2	---
Severance pay.....	62	---	9	---	---
Total.....	$5,557	$5,794	$6,014	$6,275	$1,615

The current estimate for 1975 has increased over the 1975 budget due to the large increase in the cost of health benefits services. In addition, there was a 20% increase in the government's contribution to the Federal Health Benefits Program effective January 1975.

The increase in 1976 reflects the full year cost of the increased government contribution.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
B. Supporting Costs	$515	$515	$515	$515	$129
1. Transfer of personnel.....	$96	$40	$96	$96	$23

The 1975 budget estimate categorized subsistence, miscellaneous moving expenses, and real estate costs under "other personnel benefits". These costs are now shown here. Both 1976 and 1976 are based on the 1974 experience of 38 moves.

2. Personnel training.....	$419	$475	$419	$419	$106

The current estimates for 1975 and 1976 are held to the same level of costs as experienced in 1974. Higher tuition costs have been offset by reducing the number of participants in professional and administrative short courses and seminars.

TRAVEL

II. TRAVEL.....	$1,903	$1,910	$1,980	$2,267	$681

Over one-half of Langley travel is associated with the Viking Project. This is required to ensure the maintenance of a critical launch schedule and to provide timely program direction in order to minimize development costs. Other areas in aeronautics and space requiring focused effort include the Advanced Supersonic Technology program, Rotor Systems Research aircraft, Hypersonic Research Aircraft technology, General Aviation, and Terminal Configured Vehicles as well as the Scout project and Nimbus G.

The current estimate for 1975 is increased over the 1975 budget estimate to satisfy requirements for Program Related Travel. Reductions reflecting the recent legislation limiting Federal travel expenses have been made, but are offset by additions for Viking Program travel.

The increase in 1976 reflects a small increment for Program Related Travel, and an adjustment of the 1975 level to take into account increased air fare tariffs.

Basis of Fund Requirements

Summary of Travel by Major Category

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
A. Program related travel.....	$1,436	$1,389	$1,616	$1,874	$587
B. Meetings and technical seminars.....	118	171	95	102	25
C. Administrative travel	349	350	269	291	69
Total.....	$1,903	$1,910	$1,980	$2,267	$681
A. Program related travel.....	$1,436	$1,389	$1,616	$1,874	$587

The current estimate for 1975 is increased over the 1975 budget estimate to assure close program direction and coordination of the Viking program. Timely reviews are essential to minimize engineering costs, and to ensure maintenance of critical schedules preparatory to vehicle launch. The increase in 1976 includes an increment for travel associated with post-launch, flight and mission operations of the Viking and Nimbus G projects.

B. Meetings and technical seminars.....	$118	$171	$95	$102	$25
C. Administrative travel.....	$349	$350	$269	$291	$69

For Meetings and Technical Seminars and Administrative Travel the current estimate for 1975 is reduced from the 1975 budget estimate to reflect the recent legislation curtailing Federal travel expenses. Travel requirements for 1976 are estimated at the 1975 level, and adjusted to take into account increased air fares.

FACILITIES SERVICES

III. FACILITIES SERVICES..	$6,345	$5,895	$6,421	$7,172	$1,890

Basis of Fund Requirements

Summary of Facilities Services

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
A. Maintenance and Related Services					
1. Maintenance of buildings and grounds.....	$1,081	$994	$342	$795	$235
2. Custodial services.....	1,233	1,242	1,377	1,441	375
3. Maintenance of equipment.....	70	80	70	74	20
Subtotal.....	$2,384	$2,316	$1,789	$2,310	$630
B. Operation of Facilities					
1. Utilities.....	$2,407	$2,326	$3,420	$3,625	$940
2. Supplies and equipment.....	1,554	1,253	1,212	1,237	320
Subtotal.....	$3,961	$3,579	$4,632	$4,862	$1,260
Total, Facilities Services	$6,345	$5,895	$6,421	$7,172	$1,890
A. Maintenance and Related Services...	$2,384	$2,316	$1,789	$2,310	$630
1. Maintenance, repair and alterations of buildings and grounds.....	$1,081	$994	$342	$795	$235

The current estimate for 1975 is decreased from the 1975 budget estimate by deferring maintenance, This action, although undesirable, was necessary to allow the use of these funds to cover the rising cost of utilities.

The increase in 1976 provides for partial resumption of the deferred mainteneance.

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	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
2. Custodial services.....	$1,233	$1,242	$1,377	$1,441	$375

The current estimate for 1975 is increased over the 1975 budget estimate to account for wage escalation. The increase in 1976 reflects the full year cost of the 1975 labor agreements.

3. Maintenance of equipment.....	$70	$80	$70	$74	$20

The 1975 current estimate is decreased from the budget estimate to reflect a lower level of equipment maintenance. The equipment inventory was reduced to offset the escalated cost of services. The increase in 1976 reflects the full year cost of wage escalation.

B. Operation of Facilities.....	$3,961	$3,579	$4,632	$4,862	$1,260
1. Utilities.....	$2,407	$2,326	$3,420	$3,625	$940

The estimates for 1975 and 1976 reflect the same level of usage as in 1974. The increase in the current estimate for 1975 from the 1975 budget estimate covers a further rise in utility rates of approximately 42%. The increase in 1976 reflects the full year cost of this higher rate.

2. Supplies and equipment.....	$1,554	$1,253	$1,212	$1,237	$320

The current estimate for 1975 is decreased from the 1975 budget estimate due to a reduction in the amount of supplies and materials purchased. This decrease was partially offset by increased prices for electronic materials, fuels and lubricants. The increase in 1976 provides for the full year cost of these price increases.

TECHNICAL SERVICES

IV. TECHNICAL SERVICES...	$1,549	$1,208	$1,171	$1,202	$380

Basis of Fund Requirements

Summary of Technical Services

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
A. Automatic Data Processing					
1. Equipment.....	$108	$74	$119	$119	$40
2. Programming and operation services.....	1,036	978	707	758	260
Subtotal.....	$1,144	$1,052	$826	$877	$300
B. Engineering Services.	$84	---	$40	---	---
C. Scientific and Technical Information and Educational Programs					
1. Library services.	$26	---	$26	$28	$5
2. Educational.....	295	156	279	297	75
Subtotal.....	$321	$156	$305	$325	$80
Total, Technical Services	$1,549	$1,208	$1,171	$1,202	$380
A. Automatic Data Processing	$1,144	$1,052	$826	$877	$300

The current estimate for 1975 was decreased from the 1975 budget estimate to reflect a reduction in programming and operation services. Curtailment of these services was necessary to free up funds to cover the increasing cost of utilities. The increase in the 1976 estimate is for higher wage rates on existing contracts; the level of about 37 manyears of effort is the same as in 1975.

B. Engineering Services.	$84	---	$40	---	---

The increase in the current estimate for 1975 over the budget estimate reflects the cost of a systems study on warehouse operations. This study is intended to effect operating economies by automating the requisitioning and control functions. We do not anticipate similar services to be required in 1976.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
C. Scientific and Technical Information and Educational Programs	$321	$156	$305	$325	$80
1. Library services..	$26	---	$26	$28	$5

The current estimate for 1975 is for library services which were included under Administrative support services in the 1975 budget estimate. They are shown here to better characterize the support provided. The increase in 1976 reflects wage rate escalation.

2. Educational programs.....	$295	$156	$279	$297	$75

The current estimate for 1975 is an increase over the 1975 budget estimate for new opportunity programs for the disadvantaged, and for the increased cost of operating the Visitor Center. The increase in 1976 reflects the full year cost of the expanded opportunity programs started in 1975.

ADMINISTRATIVE SUPPORT

V. ADMINISTRATIVE SUPPORT.....	$3,995	$3,375	$3,834	$4,033	$942

Basis of Fund Requirements

Summary of Administrative Support

A. Communications					
1. Leased lines and long distance tolls.....	$350	$400	$432	$452	$113
2. Local service....	700	760	819	853	212
3. Other communications.....	4	8	4	4	1
Subtotal.....	$1,054	$1,168	$1,255	$1,309	$326
B. Administrative Printing.....	$20	$41	$20	$20	$5
C. Supplies, Materials and Equipment.....	$704	$555	$654	$689	$147

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
D. Transportation					
1. Center operations	$536	$270	$573	$629	$155
2. Common carrier...	79	254	85	90	20
Subtotal.....	$615	$524	$658	$719	$175
E. Administrative Support Services					
1. Installation support services	$1,398	$887	$1,021	$1,060	$227
2. Medical services.	204	200	226	236	62
Subtotal.....	$1,602	$1,087	$1,247	$1,296	$289
Total, Administrative Support.....	$3,995	$3,375	$3,834	$4,033	$942
A. Communications.....	$1,054	$1,168	$1,255	$1,309	$326

The current estimate for 1975 is increased over the 1975 budget estimate to account for rate increases in maintenance, repair, installation, and relocation of telephone instruments. The increase in 1976 reflects the full year costs of the 1975 service rate increase.

B. Administrative Printing.....	$20	$41	$20	$20	$5

The current estimate for 1975 is reduced from the 1975 budget estimate because of a change to in-house printing and binding operations rather than commerical contracts as previously planned. The 1976 program is maintained at the 1975 level.

C. Supplies, Materials and Equipment	$704	$555	$654	$689	$147

The current estimate for 1975 increased from the 1975 budget due to the increased cost of aviation fuel required in the operation of NASA aircraft. The increase in 1976 reflects the full year cost of the higher fuel prices.

D. Transportation.....	$615	$524	$658	$719	$175

The current estimate for 1975 is increased over the 1975 budget estimate to account for higher wage rates and material prices for maintenance and operations of NASA aircraft. The increase in 1976 is for engine overhaul of NASA aircraft.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
E. Administrative Support Services...	$1,602	$1,087	$1,247	$1,296	$289

This function includes support for mail, warehousing, and medical services. The current estimate for 1975 is increased from the 1975 budget estimate because of wage increases for contracted services. The 1976 program is planned at the 1975 level; however, the increase reflects the full year cost of 1975 wage increases.

OFFICE OF DIRECTOR FOR ELECTRONICS

	75	76
Excepted	2	2
GS-15	2	2
GS-14	1	1
Other GS	4	4
Total	9	9

ANALYSIS AND COMPUTATION DIVISION

	75	76
Excepted	1	1
GS-16	1	1
GS-15	6	6
GS-14	12	12
Other GS	110	110
Total	130	130

INSTRUMENT RESEARCH DIVISION

	75	76
Excepted	1	1
GS-15	3	3
GS-14	17	17
Other GS	146	146
Total	167	167

FLIGHT DYNAMICS AND CONTROL DIVISION

	75	76
Excepted	1	1
GS-16	2	2
GS-15	8	8
GS-14	11	11
Other GS	56	56
Total	78	78

FLIGHT INSTRUMENTATION DIVISION

	75	76
Excepted	1	1
GS-15	10	10
GS-14	28	28
Other GS	167	167
Total	206	206

OFFICE OF DIRECTOR FOR STRUCTURES

	75	76
Excepted	2	2
GS-14	1	1
Other GS	2	2
Total	5	5

ACOUSTICS AND NOISE REDUCTION DIVISION

	75	76
Excepted	1	1
GS-16	1	1
GS-15	6	6
GS-14	9	9
Other GS	46	46
Total	63	63

STRUCTURES AND DYNAMICS DIVISION

	75	76
Excepted	1	1
GS-16	1	1
GS-15	10	10
GS-14	26	26
Other GS	83	83
Total	121	121

MATERIALS DIVISION

	75	76
Excepted	1	1
GS-16	2	2
GS-15	9	9
GS-14	6	6
Other GS	49	49
Total	67	67

OFFICE OF DIRECTOR OF AERONAUTICS

	75	76
Excepted	1	1
GS-16	1	1
GS-15	4	4
Other GS	4	4
Total	10	10

AERONAUTICAL SYSTEMS DIVISION

	75	76
GS-16	1	1
GS-15	9	9
GS-14	4	4
Other GS	9	9
Total	23	23

FLIGHT RESEARCH DIVISION

	75	76
Excepted	1	1
GS-16	1	1
GS-15	5	5
GS-14	13	13
Other GS	62	62
Wage Grade	3	3
Total	85	85

HIGH-SPEED AERO-DYNAMICS DIVISION

	75	76
Excepted	1	1
GS-16	1	1
GS-15	18	18
GS-14	15	15
Other GS	114	114
Total	149	149

SUBSONIC-TRANSONIC AERODYNAMICS DIVISION

	75	76
Excepted	1	1
GS-16	2	2
GS-15	15	15
GS-14	12	12
Other GS	80	80
Total	110	110

OFFICE OF DIRECTOR FOR SPACE

	75	76
Excepted	1	1
GS-15	7	7
GS-14	4	4
Other GS	8	8
Total	20	20

ENVIRONMENTAL AND SPACE SCIENCES DIVISION

	75	76
Excepted	1	1
GS-15	7	7
GS-14	14	14
Other GS	39	39
Total	61	61

SPACE SYSTEMS DIVISION

	75	76
Excepted	1	1
GS-16	1	1
GS-15	8	8
GS-14	14	14
Other GS	64	64
Total	88	88

SCOUT PROJECT OFFICE

	75	76
GS-15	4	4
GS-14	7	7
Other GS	26	26
Total	37	37

SPACE APPLICATIONS AND TECHNOLOGY DIVISION

	75	76
Excepted	1	1
GS-15	7	7
GS-14	17	17
Other GS	58	58
Total	83	83

SYSTEMS ENGINEERING AND OPERATIONS

	75	76
Excepted	1	1
GS-15	3	3
GS-14	6	6
Other GS	16	16
Total	26	26

FABRICATION DIVISION

	75	76
GS-15	1	1
GS-14	3	3
Other GS	404	404
Wage Grade	5	5
Total	413	413

SYSTEMS ENGINEERING DIVISION

	75	76
GS-15	7	7
GS-14	14	14
Other GS	142	142
Total	163	163

RESEARCH FACILITIES ENGINEERING DIVISION

	75	76
GS-15	6	6
GS-14	10	10
Other GS	71	71
Total	87	87

OPERATIONS SUPPORT DIVISION

	75	76
GS-15	1	1
GS-14	1	1
Other GS	446	446
Wage Grade	17	17
Total	465	465

PLANT ENGINEERING DIVISION

	75	76
GS-15	1	1
GS-14	5	5
Other GS	96	96
Wage Grade	14	14
Total	116	116

SCIENTIFIC AND TECHNICAL INFORMATION DIVISION

	75	76
GS-15	1	1
Other GS	63	63
Wage Grade	12	12
Total	76	76

ADMINISTRATION

	75	76
Excepted	2	2
GS-15	4	4
GS-14	3	3
Other GS	18	18
Total	27	27

FINANCIAL MANAGEMENT DIVISION

	75	76
GS-15	1	1
GS-14	1	1
Other GS	56	56
Total	58	58

BUSINESS DATA SYSTEMS DIVISION

	75	76
Excepted	1	1
GS-14	1	1
Other GS	17	17
Total	19	19

PERSONNEL DIVISION

	75	76
GS-15	1	1
GS-14	2	2
Other GS	46	46
Total	49	49

MANAGEMENT SUPPORT DIVISION

	75	76
GS-15	1	1
Other GS	69	69
Total	70	70

PROCUREMENT DIVISION

	75	76
Excepted	1	1
GS-14	4	4
Other GS	70	70
Total	75	75

PROGRAMS AND RESOURCES DIVISION

	75	76
GS-15	1	1
Other GS	15	15
Total	16	16

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LANGLEY RESEARCH CENTER

STAFFING SUMMARY

	75	76
Excepted	30	30
GS-16	14	14
GS-15	184	184
GS-14	291	291
Other GS	2762	2762
Wage Grade	51	51
Total	3332	3332

OFFICE OF DIRECTOR

	75	76
Excepted	3	3
GS-15	3	3
GS-14	1	1
Other GS	14	14
Total	21	21

VIKING PROJECT OFFICE

	75	76
Excepted	3	3
GS-15	14	14
GS-14	28	28
Other GS	82	82
Total	127	127

OFFICE OF EXTERNAL AFFAIRS

	75	76
GS-15	1	1
GS-14	1	1
Other GS	10	10
Total	12	12

OFFICE OF DIRECTOR FOR ELECTRONICS

	75	76
Excepted	2	2
GS-15	2	2
GS-14	1	1
Other GS	4	4
Total	9	9

ANALYSIS AND COMPUTATION DIVISION

	75	76
Excepted	1	1
GS-16	1	1
GS-15	6	6
GS-14	12	12
Other GS	110	110
Total	130	130

INSTRUMENT RESEARCH DIVISION

	75	76
Excepted	1	1
GS-15	3	3
GS-14	17	17
Other GS	146	146
Total	167	167

FLIGHT DYNAMICS AND CONTROL DIVISION

	75	76
Excepted	1	1
GS-16	2	2
GS-15	8	8
GS-14	11	11
Other GS	56	56
Total	78	78

FLIGHT INSTRUMENTATION DIVISION

	75	76
Excepted	1	1
GS-15	10	10
GS-14	28	28
Other GS	167	167
Total	206	206

OFFICE OF DIRECTOR FOR STRUCTURES

	75	76
Excepted	2	2
GS-14	1	1
Other GS	2	2
Total	5	5

ACOUSTICS AND NOISE REDUCTION DIVISION

	75	76
Excepted	1	1
GS-16	1	1
GS-15	6	6
GS-14	9	9
Other GS	46	46
Total	63	63

STRUCTURES AND DYNAMICS DIVISION

	75	76
Excepted	1	1
GS-16	1	1
GS-15	10	10
GS-14	26	26
Other GS	83	83
Total	121	121

MATERIALS DIVISION

	75	76
Excepted	1	1
GS-16	2	2
GS-15	9	9
GS-14	6	6
Other GS	49	49
Total	67	67

OFFICE OF DIRECTOR OF AERONAUTICS

	75	76
Excepted	1	1
GS-16	1	1
GS-15	4	4
Other GS	4	4
Total	10	10

AERONAUTICAL SYSTEMS DIVISION

	75	76
GS-16	1	1
GS-15	9	9
GS-14	4	4
Other GS	9	9
Total	23	23

FLIGHT RESEARCH DIVISION

	75	76
Excepted	1	1
GS-16	1	1
GS-15	5	5
GS-14	13	13
Other GS	62	62
Wage Grade	3	3
Total	85	85

HIGH-SPEED AERO-DYNAMICS DIVISION

	75	76
Excepted	1	1
GS-16	1	1
GS-15	18	18
GS-14	15	15
Other GS	114	114
Total	149	149

SUBSONIC-TRANSONIC AERODYNAMICS DIVISION

	75	76
Excepted	1	1
GS-16	2	2
GS-15	15	15
GS-14	12	12
Other GS	80	80
Total	110	110

OFFICE OF DIRECTOR FOR SPACE

	75	76
Excepted	1	1
GS-15	7	7
GS-14	4	4
Other GS	8	8
Total	20	20

ENVIRONMENTAL AND SPACE SCIENCES DIVISION

	75	76
Excepted	1	1
GS-15	7	7
GS-14	14	14
Other GS	39	39
Total	61	61

SPACE SYSTEMS DIVISION

	75	76
Excepted	1	1
GS-16	1	1
GS-15	8	8
GS-14	14	14
Other GS	64	64
Total	88	88

SCOUT PROJECT OFFICE

	75	76
GS-15	4	4
GS-14	7	7
Other GS	26	26
Total	37	37

SPACE APPLICATIONS AND TECHNOLOGY DIVISION

	75	76
Excepted	1	1
GS-15	7	7
GS-14	17	17
Other GS	58	58
Total	83	83

OFFICE OF DIRECTOR FOR SYSTEMS ENGINEERING AND OPERATIONS

	75	76
Excepted	1	1
GS-15	3	3
GS-14	6	6
Other GS	16	16
Total	26	26

FABRICATION DIVISION

	75	76
GS-15	1	1
GS-14	3	3
Other GS	404	404
Wage Grade	5	5
Total	413	413

SYSTEMS ENGINEERING DIVISION

	75	76
GS-15	7	7
GS-14	14	14
Other GS	142	142
Total	163	163

RESEARCH FACILITIES ENGINEERING DIVISION

	75	76
GS-15	6	6
GS-14	10	10
Other GS	71	71
Total	87	87

OPERATIONS SUPPORT DIVISION

	75	76
GS-15	1	1
GS-14	1	1
Other GS	446	446
Wage Grade	17	17
Total	465	465

OFFICE OF DIRECTOR FOR ADMINISTRATION

	75	76
Excepted	2	2
GS-15	4	4
GS-14	3	3
Other GS	18	18
Total	27	27

FINANCIAL MANAGEMENT DIVISION

	75	76
GS-15	1	1
GS-14	1	1
Other GS	56	56
Total	58	58

BUSINESS DATA SYSTEMS DIVISION

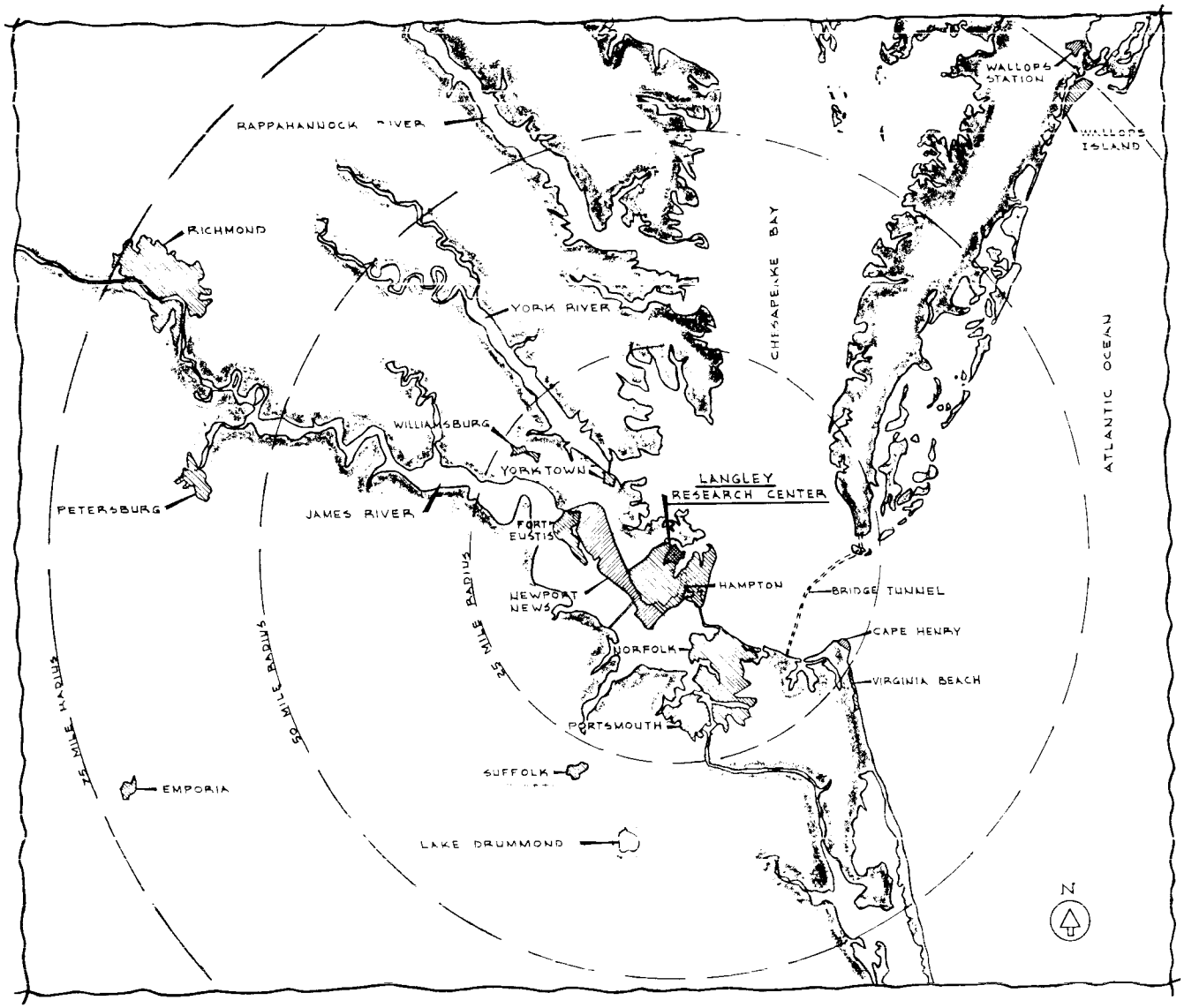
	75	76
Excepted	1	1
GS-14	1	1
Other GS	17	17
Total	19	19

PERSONNEL DIVISION

	75	76
GS-15	1	1
GS-14	2	2
Other GS	46	46
Total	49	49

MANAGEMENT SUPPORT DIVISION

	75	76
GS-15	1	1
Other GS	69	69
Total	70	70



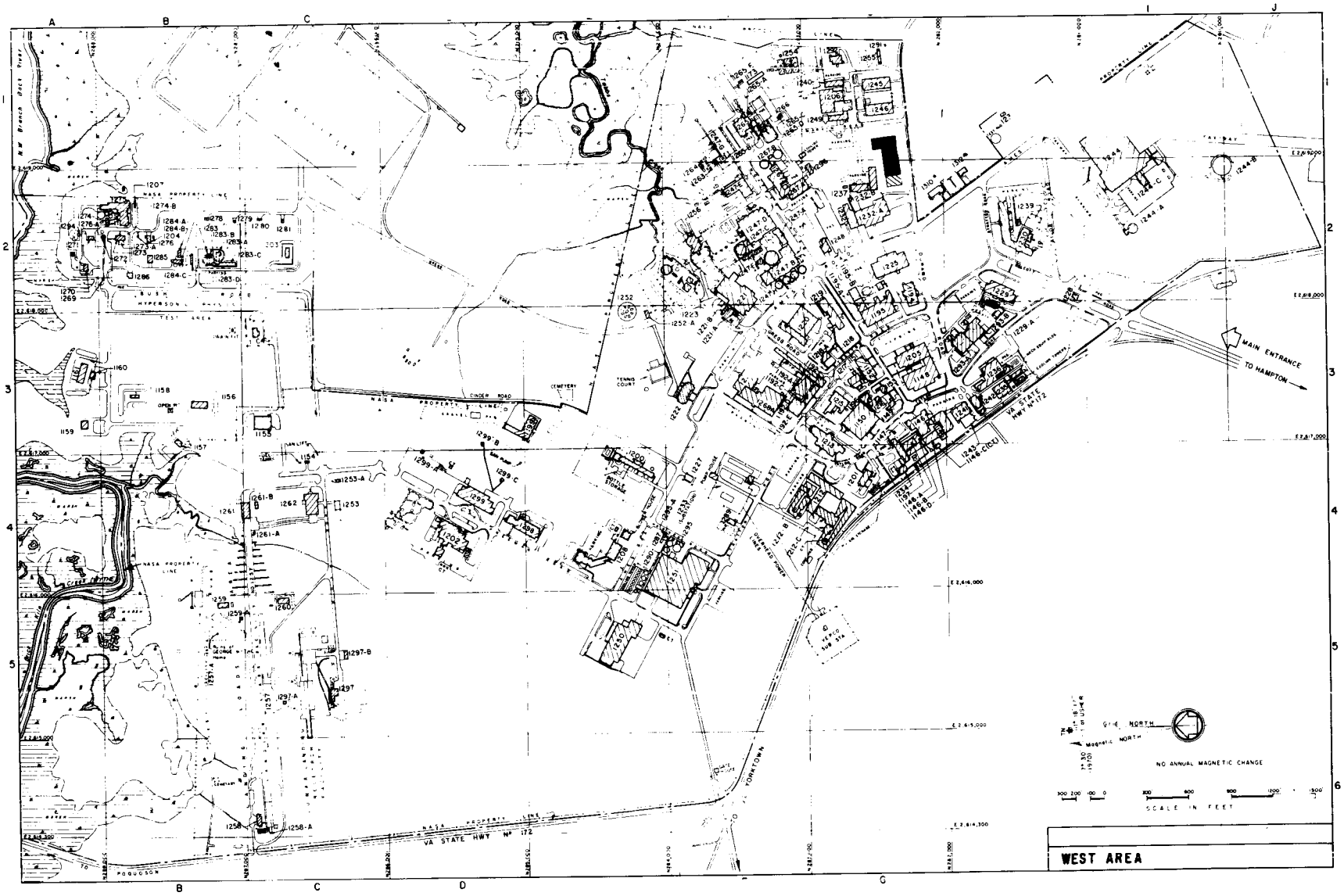
LANGLEY RESEARCH CENTER AND VICINITY

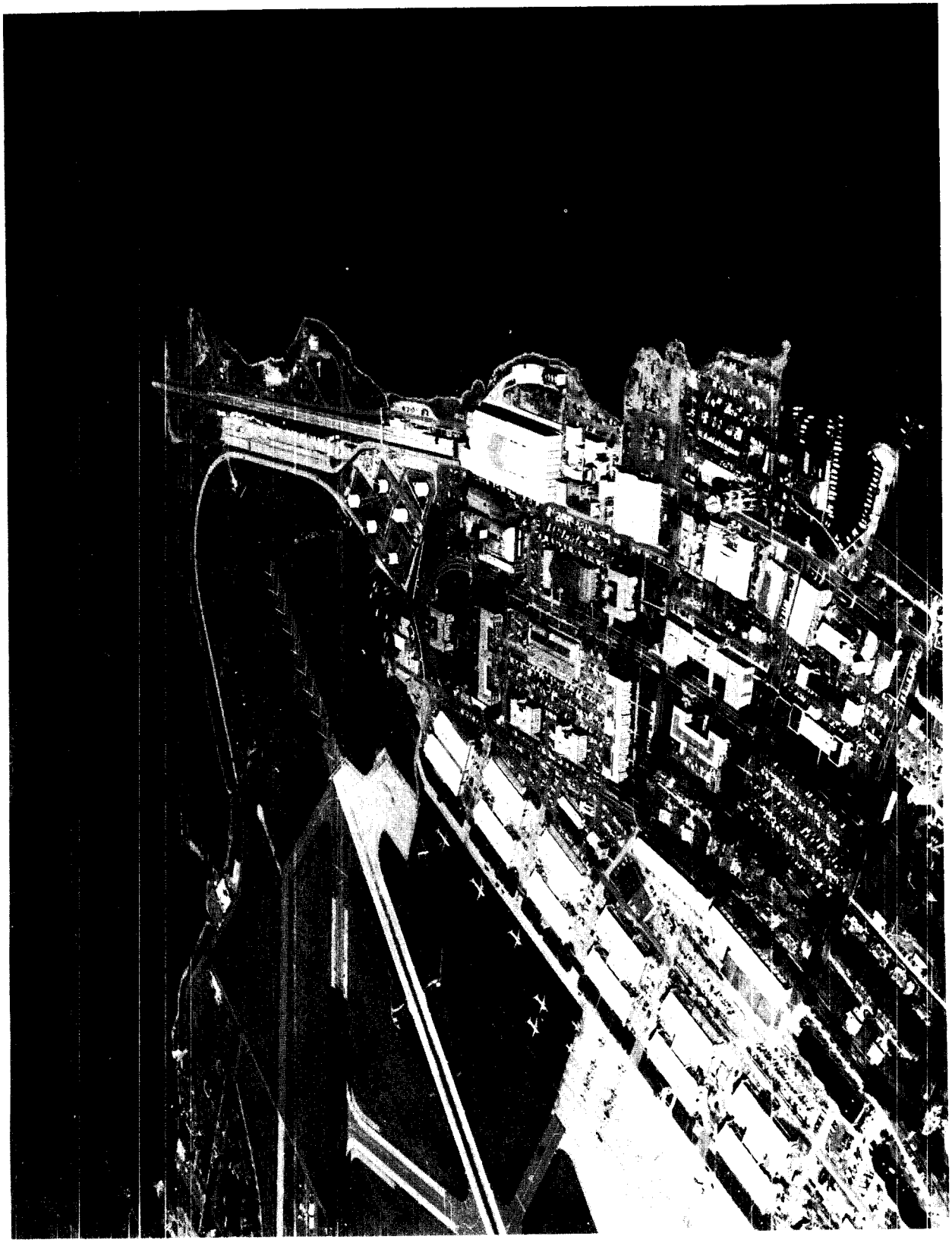
1" — 8 MILES

LANGLEY RESEARCH CENTER

FISCAL YEAR 1976 ESTIMATES

LOCATION PLAN





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RESEARCH AND PROGRAM MANAGEMENT

FISCAL YEAR 1976 ESTIMATES

LEWIS RESEARCH CENTER

DESCRIPTION

The Lewis Research Center occupies two sites in north central Ohio. The older one, established in 1941 adjacent to the Cleveland-Hopkins International Airport, occupies 366 acres including 14 acres leased from the City of Cleveland. Here there are over 100 buildings, including two large supersonic wind tunnels, a V/STOL subsonic tunnel, large Propulsion Systems Laboratories with four large altitude test chambers suitable for testing full scale aircraft engines and other airbreathing power conversion systems requiring altitude conditions, a High Pressure Turbine and Combustor Facility, an Engine Fan and Jet Noise Facility, Engine Components Research Laboratories, a Zero Gravity Research Facility, Space Power Chambers, Electric Propulsion Research Laboratory, Energy Conversion Laboratories, five materials research buildings, a High Energy Fuels Laboratory, an Instrument Research Laboratory, a Chemistry Laboratory and an Engine Research Building.

The Plum Brook Station established in 1956, is located south of Sandusky, Ohio, about fifty miles west of Cleveland, on land formerly occupied by the Plum Brook Ordnance Works. It occupies 8,045 acres of which 7,989 are owned by the Government and 56 are in easements. There are 122 buildings and 99 concrete storage bunkers. The major facilities include the Space Power Facility, Spacecraft Propulsion Research Facility, Hypersonic Tunnel Facility, Cryogenic Propellant Tank Facility, Altitude Rocket Test Facility, and Reactor Facility. A new 100 KW Electric Wind Turbine Generator Facility is being constructed for a program jointly sponsored by the National Science Foundation and NASA. During the second half of FY 1975, consistent with our future research and technology needs, the Plum Brook Station will be placed in a standby mode.

The total capital investment of the Lewis Research Center as of June 30, 1974 was $443,649,000 of which $51,496,000 represents facilities held by contractors at various locations.

MISSION

The Lewis Research Center's major areas of emphasis are research and technology programs on aircraft propulsion, space power, space propulsion, and communications systems and procurement and launch services for missions using Centaur.

Lewis is responsible for the management of the Atlas/Centaur and Titan/Centaur launch vehicles. This includes the procurement of these vehicles and

provision of launch services for missions utilizing them. In aeronautical propulsion, Lewis research supports the determination of the capabilities and limitations of full-scale engines over their complete range of operation and the reduction of aircraft noise. Aircraft engines for future subsonic and supersonic aircraft with high compressor pressure ratios and high turbine inlet temperatures are being investigated. High flight Mach number aircraft engine inlets, combustion nozzles, and systems are being investigated.

A flight test program is being conducted with an F-106 airplane to determine the interactions of engine inlets and exhaust nozzles with wings and fuselage at transonic speeds. An experimental flight program is being implemented utilizing the YF-12 aircraft in cooperation with the Flight Research Center. Propulsion control techniques are being developed to increase compatibility of engine/inlet propulsion interactions with airframe and aircraft end-use requirements.

The electric power generation technology effort encompasses photovoltaic, electrochemical, static, and dynamic systems.

The space propulsion programs include chemical and electric propulsion technology and component and systems development. Chemical propulsion programs are providing the technology for an advanced high-performance reusable Hydrogen-Oxygen Upper Stage Space Propulsion System for near-earth space missions. Both primary and auxiliary electric thrusters of the electron bombardment type are being developed for foreseeable applications.

The Center has maintained a substantial materials research effort aimed at raising the physical limitations of materials to allow the improvement of component and system performance of propulsion and power generation systems, launch vehicles, and spacecraft. Materials being investigated include composites, titanium alloys, superalloys of nickel and cobalt base, refractory metals, dispersion strengthened metals, and ceramics.

Lewis is responsible for the development of the transmitter and power tube for the Cooperative Applications Satellite (CAS), and is the lead Center for coordinating the launch and mission support.

The NASA Aerospace Safety Research and Data Institute located at Lewis conducts research to supply safety technology, maintains a safety data bank and library, responds to requests for information, and provides consultation for NASA and the technical community.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
FUNCTIONS					
I. Personnel and Related Costs.....	$69,584	$69,598	$70,039	$71,833	$18,735
II. Travel.....	1,063	1,065	994	1,074	316
III. Facilities Services..	7,938	6,400	7,587	7,773	2,538
IV. Technical Services...	356	432	486	406	144
V. Administrative Support	917	943	815	816	203
Total, fund requirements...	$79,858	$78,438	$79,921	$81,902	$21,936

Distribution of Permanent Positions by Program

Over two thirds of Lewis' permanent positions are used in direct support of the various R&D programs. The following table summarizes actual and planned utilization of positions for direct program activity and for indirect support.

Direct Positions					
Manned Space Flight					
Space flight operations..	2	8	2	3	3
Space Sciences					
Launch vehicle procurement	212	230	213	213	213
Applications					
Space applications.....	117	100	148	106	106
Aeronautics and Space Technology					
Aeronautical research and technology.....	1,417	1,376	1,367	1,396	1,396

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Dollars in Thousands)			
Space and nuclear research and technology.....	659	740	549	561	561
Energy					
Energy technology applications.....	57	---	150	150	150
Technology Utilization.....	6	6	6	6	6
Subtotal, direct positions.....	2,470	2,460	2,435	2,435	2,435
Indirect Positions					
Director and staff.....	6	14	7	7	7
Administrative support.....	343	317	337	337	337
Research and development support.....	296	281	246	246	246
Subtotal, indirect positions.....	645	612	590	590	590
Total, permanent positions.	3,115	3,072	3,025	3,025	3,025

PERSONNEL AND RELATED COSTS

I. PERSONNEL AND RELATED COSTS.....	$69,584	$69,598	$70,039	$71,833	$18,735

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
Basis of Fund Requirements					
A. Compensation and Benefits:					
1. Compensation					
a. Permanent positions...	$62,080	$61,755	$62,191	$63,936	$16,658
b. Nonpermanent positions...	336	571	615	622	180
c. Overtime and other compensation...	832	930	901	940	235
Subtotal, Compensation..	$63,248	$63,256	$63,707	$65,498	$17,073
2. Benefits.....	6,079	6,094	6,044	6,087	1,600
Subtotal, Compensation and Benefits.....	$69,327	$69,350	$69,751	$71,585	$18,673
B. Supporting Costs					
1. Transfer of personnel	$69	$68	$100	$60	$15
2. Personnel training.....	188	180	188	188	47
Subtotal, Supporting Costs.....	$257	$248	$288	$248	$62
Total, Personnel and Related Costs.....	$69,584	$69,598	$70,039	$71,833	$18,735
1. Compensation.....	$63,248	$63,256	$63,707	$65,498	$17,073
a. Permanent positions.....	$62,080	$61,755	$62,191	$63,936	$16,658

The difference between the 1975 budget estimate and the current estimate for 1975 is the cost of the October 1974 pay raise. This is partially offset by the savings resulting from a reduction in manpower from 3,072 to 3,025.

The increase in 1976 is due to the full year net effect of these actions.

Basis of Cost for Permanent Positions
(Thousands of Dollars)

In 1976 the cost of permanent positions will be $63,936, an increase of $1,745 from 1975. This increase results as follows:

Cost of permanent positions in 1975.....		$62,191
Cost increases:.....		+3,031
Within grade advances and career development		
Full Year effect of 1975 actions.....	+$487	
Partial year effect of 1976 actions.....	+523	
Full year effect of October 1974 pay raise and wage grade increases.....	+1,769	
Additional extra day.....	+252	
Cost decreases:.....		-1,286
Full year effect of 1975 manpower reductions.....	-$878	
Turnover savings		
Full year effect of 1975 actions.....	-118	
Partial year effect of 1976 actions.....	-290	
Cost of permanent positions in 1976.....		$63,936

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Dollars in Thousands)			
b. Nonpermanent Positions					
1. Cost.....	$336	$571	$615	$622	$180
2. Number of manyears..	66	103	104	104	41

The 1976 program includes 104 positions to support the following programs:

Distribution of Nonpermanent Manyears by Program

	Manyears
College cooperative training.....	40
Summer employment.....	10
Opportunity programs.....	29
Other employment.....	25
Total.....	104

The current estimate for 1975 has been increased from the 1975 budget estimate due primarily to the October 1974 pay raise. The program for 1976 is planned at the same level as 1975.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
c. Overtime and other compensation.....	$832	$930	$901	$940	$235

The current estimate for 1975 reflects savings identified with final testing activities at the Plum Brook Station, partially offset by wage grade and general schedule pay raises. 1976 reflects the 1975 level of overtime and the full year cost of the pay raises.

2. Benefits	$6,079	$6,094	$6,044	$6,087	$1,600

The following table indicates the costs of personnel benefits by major categories:

Category of Cost					
Contribution to Civil Service Retirement Fund	$4,312	$4,323	$4,349	$4,465	$1,181
Contribution for life insutance.	211	217	211	209	55
Contribution for employee health insurance.....	833	715	1,134	1,358	350
Contribution to FICA.....	16	33	25	25	6
Incentive awards.	39	35	40	25	6
Other personnel benefits.....	4	2	5	5	2
Severance pay....	664	769	280	---	---
Total.....	$6,079	$6,094	$6,044	$6,087	$1,600

The current estimate for 1975 shows a decrease from the 1975 budget. This decrease results from the net effect of two actions. Retirements and attrition have been greater than anticipated thus reducing the size of the reduction-in-force associated with the closing of Plum Brook Station and decreasing the severance pay requirement. This savings in severance pay was partially offset by the increased cost of health benefits and the 20 percent increase in the government contribution to the Federal Health Benefits Program.

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The increase in 1976 reflects the full year net cost of the above actions.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
B. Supporting Costs	$257	$248	$288	$248	$62
1. Transfer of personnel.....	69	68	100	60	15

The increase in the current estimate over the 1975 budget reflects the cost of relocating personnel from Plum Brook Station to Cleveland. This relocation is a one-time requirement, and the 1976 estimate reflects a level of 15 moves as experienced in past years.

2. Personnel training.....	$188	$180	$188	$188	$47

Approximately 38 percent of the training activity supports technically oriented training. Another 33 percent is provided specifically in the scientific and engineering fields. The remaining 29 percent supports administrative and clerical programs. 1975 and 1976 reflect the level of support experienced in 1974.

TRAVEL

II. TRAVEL.....	$1,063	$1,065	$994	$1,074	$316

Over 75 percent of all Lewis travel is program related with major emphasis on support for the Centaur launch activities and research technology programs for aeronautics and space.

The current estimate for 1975 is reduced from the 1975 budget estimate to reflect the recent legislation limiting federal travel expenses. Travel requirements for 1976 are estimated at the 1975 level, and adjusted to take into account increased air fares.

Basis of Fund Requirements

Summary of Travel by Major Category

A. Program Travel.....	$824	$770	$766	$828	$244
B. Meetings and Technical Seminars.....	166	205	158	171	50
C. Administrative Travel	73	90	70	75	22
Total, Travel.....	$1,063	$1,065	$994	$1,074	$316

FACILITIES SERVICES

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
III. FACILITIES SERVICES	$7,938	$6,400	$7,587	$7,773	$2,538

Basis of Fund Requirements

Summary of Facilities Services

A. Maintenance and Related Services					
1. Maintenance, repair and alteration of buildings and grounds.....	$1,775	$523	$1,267	$1,241	$340
2. Custodial services....	1,749	1,617	1,694	1,711	573
3. Maintenance of equipment...	142	105	102	107	30
Subtotal.....	$3,666	$2,245	$3,063	$3,059	$943
B. Operation of Facilities					
1. Utilities.....	$3,735	$3,520	$4,431	$4,618	$1,565
2. Supplies and equipment...	537	635	93	96	30
Subtotal.....	$4,272	$4,155	$4,524	$4,714	$1,595
Total, Facilities Services.....	$7,938	$6,400	$7,587	$7,773	$2,538
A. Maintenance and Related Services	$3,666	$2,245	$3,063	$3,059	$943
1. Maintenance, repair, and alteration of buildings and grounds.....	$1,775	$523	$1,267	$1,241	$340

During the formulation of the 1975 budget, it was planned to continue a constrained maintenance program which essentially provided for only breakdown repairs. Since that time, a determination has been made that a preventive maintenance program is necessary in order to minimize repair costs in future years and the 1975 and 1976 estimates have been increased to reflect that program. This increased level of maintenance provides for electrical and equipment maintenance, maintenance of utilities systems, painting, and general building maintenance. The decrease in the 1975 and 1976 estimate from 1974 reflects the phased closing of Plum Book Station.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
2. Custodial services	$1,749	$1,617	$1,694	$1,711	$573

Custodial services provide for 155 manyears of effort to support the janitorial, security and rubbish services at both Cleveland and Plum Brook Station. Estimates for 1975 and 1976 reflect reduction from 1974 due to the placing of Plum Brook Station in a standby mode as planned in the 1975 budget estimate. An increase in the current estimate for 1975 is due to wage and price escalation. The 1976 estimate reflects the 1975 pricing level.

3. Maintenance and equipment.....	$142	$105	$102	$107	$30

The current estimate for 1975 has decreased based upon the lower cost for heavy equipment maintenance required in the phasing out of Plum Brook Station. 1976 reflects an increase for higher maintenance costs at Cleveland.

B. Operation of Facilities	$4,272	$4,155	$4,524	$4,714	$1,595
1. Utilities.....	$3,735	$3,520	$4,431	$4,618	$1,565

The increase in the current estimate for 1975 from the 1975 budget is due to a 46% increase in electrical power rates since 1974, which was not anticipated in the 1975 budget.

1976 reflects the full year cost of the 1975 increase.

2. Supplies and equipment.....	$537	$635	$93	$96	$30

The current estimate for 1975 decreases from the 1975 budget due to a major reduction in the purchase of mechanical, shop and general purpose facility equipment. All such equipment requirements in both 1975 and 1976 are being deferred to help offset the increased maintenance costs associated with buildings and grounds.

TECHNICAL SERVICES

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
IV. TECHNICAL SERVICES...	$356	$432	$486	$406	$144

Basis of Fund Requirements

Summary of Technical Services

A. Automatic Data Processing					
1. Equipment.....	$146	$236	$218	$137	$27
2. Programming and operations services.....	17	20	40	40	20
Subtotal.....	$163	$256	$258	$177	$47
B. Engineering Services.	$88	$122	$89	$90	$26
C. Scientific and Technical Informational and Educational Programs					
1. Educational /informational programs	$86	$37	$121	$121	$59
2. Scientific and technical information.....	19	17	18	18	12
Subtotal.....	$105	$54	$139	$139	$71
Total, Technical Services.	$356	$432	$486	$406	$144
A. Automatic Data Processing.....	$163	$256	$258	$177	$47

The current estimate for 1975 includes an increase in programming and operations support for the administrative computing requirements. This has been offset by a reduction in planned equipment purchases.

The 1976 estimate is the same as 1975 for programming and operations, with a decrease in equipment purchases and rentals.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transtion Period
		(Thousands of Dollars)			
B. Engineering Services..	$88	$122	$89	$90	$26

The current estimate for 1975 has been reduced to the 1974 level. In 1976, the 1975 level of services will be maintained.

C. Scientific and Technical Information and Educational Programs	$105	$54	$139	$139	$71

The increase from the 1975 budget estimate to the 1975 current estimate is due to the recategorization of supplies and materials from the Administrative Support Functions in the amount of $75. The remaining increase is attributable to wage and price escalation.

1976 will continue at the 1975 level.

V. ADMINISTRATIVE SUPPORT	$917	$943	$815	$816	$203

Basis of Fund Requirements

Summary of Administrative Support

A. Communications					
1. Leased lines and long distance calls.....	$318	$309	$344	$338	$86
2. Local telephone service.....	282	160	228	225	55
3. Other communications.....	46	35	45	49	12
Subtotal.....	$646	$504	$617	$612	$153
B. Administrative Printing.....	$32	$78	$30	$30	$3
C. Supplies, Materials, and Equipment.....	$86	$148	$74	$79	$10

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
D. Transportation					
1. Center operations.	$35	$10	$28	$29	$6
2. Common carrier....	68	115	7	7	2
Subtotal.....	$103	$125	$35	$36	$8
E. Administrative Support Services.....	$50	$88	$59	$59	$29
1. Installation support.....	6	6	6	6	6
2. Occupational medicine and environmental health.....	44	82	53	53	23
Total, Administrative Support.....	$917	$943	$815	$816	$203
A. Communications.....	$646	$504	$617	$612	$153

Included in this function are services for local telephone service, FTS leased lines, as well as teletype service.

The current estimate for 1975 has increased from the 1975 budget due to increased rates for local service and the higher cost of leased lines and long distance calls.

1976 will continue at the 1975 level with a slight reduction in service associated with the closing of Plum Brook Station.

B. Administrative Printing	$32	$78	$30	$30	$3

The current estimate is less than the 1975 budget due to lower requirements for printing services.

The services for 1976 will continue at the 1975 level.

C. Supplies, Materials and Equipment.....	$86	$148	$74	$79	$10

The current estimate for 1975 is decreased from the 1975 budget due to the recategorization of $75 from this function to educational and informational programs.

The 1976 requirements for supplies and materials is estimated to be approximately the same level as 1975.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
D. Transportation.....	$103	$125	$35	$36	$8

The difference between the 1975 budget estimate and the current estimate is due to a reduction in the number of vehicle purchases. Recent analysis of transportation requirements has resulted in a decrease of 41 vehicles in the inventory operations.

The 1976 program is planned at the 1975 level.

E. Administrative Support Services.....	$50	$88	$59	$59	$29

The current estimate for 1975 is less than 1975 budget due to a delay in contracting for effluent sampling under the environmental health program. Development of sampling techniques will delay this work until 1976. The increase in 1976 as a result of the deferral is offset by the termination in medical services at Plum Brook Station.

National Aeronautics and Space Administration
Organization and Staffing Chart
LEWIS RESEARCH CENTER
Cleveland, Ohio

STAFFING SUMMARY

	75	76
EXCEPTED	29	29
GS-16	4	4
GS-15	117	117
GS-14	276	276
OTHER GS	1649	1649
WB	950	950
TOTAL PERMANENT	3025	3025

DIRECTOR'S OFFICE

	75	76
EXCEPTED	4	4
GS-15	1	1
OTHER GS	1	1
TOTAL	6	6

OFFICE OF OPERATIONS ANALYSIS AND PLANNING

	75	76
GS-15	1	1
GS-14	1	1
OTHER GS	8	8
TOTAL	10	10

OFFICE OF CHIEF SCIENTIST

	75	76
EXCEPTED	1	1
OTHER GS	1	1
TOTAL	2	2

DIRECTOR OF AEROSPACE SAFETY AND DATA INSTITUTE

	75	76
GS-15	1	1
GS-14	2	2
OTHER GS	8	8
TOTAL	11	11

OFFICE OF RELIABILITY AND QUALITY ASSURANCE

	75	76
EXCEPTED	1	1
GS-14	12	12
OTHER GS	21	21
TOTAL	34	34

PLUM BROOK STATION

	75	76
OTHER GS	4	4
TOTAL	4	4

TECHNOLOGY UTILIZATION AND PUBLIC AFFAIRS

	75	76
EXCEPTED	1	1
GS-15	1	1
GS-14	2	2
OTHER GS	18	18
TOTAL	22	22

OFFICE OF EQUAL EMPLOYMENT OPPORTUNITY

	75	76
OTHER GS	3	3
TOTAL	3	3

DIRECTOR OF AERONAUTICS

	75	76
EXCEPTED	1	1
OTHER GS	1	1
TOTAL	2	2

INSTRUMENT DEVELOPMENT AND APPLICATIONS OFFICE

	75	76
GS-15	2	2
GS-14	6	6
OTHER GS	24	24
TOTAL	32	32

WIND TUNNEL AND FLIGHT DIVISION

	75	76
EXCEPTED	1	1
GS-15	8	8
GS-14	17	17
OTHER GS	70	70
TOTAL	96	96

V/STOL AND NOISE DIVISION

	75	76
EXCEPTED	1	1
GS-15	11	11
GS-14	22	22
OTHER GS	71	71
TOTAL	105	105

FLUID SYSTEMS COMPONENTS DIVISION

	75	76
EXCEPTED	1	1
GS-16	1	1
GS-15	13	13
GS-14	14	14
OTHER GS	66	66
TOTAL	96	96

RECIPROCATING ENGINES DIVISION

	75	76
EXCEPTED	1	1
GS-15	2	2
GS-14	18	18
OTHER GS	90	90
TOTAL	111	111

DIRECTOR OF SPACE FLIGHT PROGRAMS

	75	76
EXCEPTED	1	1
OTHER GS	1	1
TOTAL	2	2

CTS PROJECT OFFICE

	75	76
GS-15	1	1
GS-14	6	6
OTHER GS	9	9
TOTAL	16	16

SPACECRAFT TECHNOLOGY DIVISION

	75	76
EXCEPTED	1	1
GS-15	5	5
GS-14	19	19
OTHER GS	86	86
TOTAL	111	111

SPACE FLIGHT SYSTEMS STUDY OFFICE

	75	76
GS-15	2	2
GS-14	2	2
OTHER GS	5	5
TOTAL	9	9

DIRECTOR OF SPACE TECHNOLOGY AND MATERIALS

	75	76
EXCEPTED	1	1
OTHER GS	1	1
TOTAL	2	2

ENERGY CONVERSION AND ENVIRONMENTAL SYSTEMS DIVISION

	75	76
EXCEPTED	1	1
GS-16	1	1
GS-15	8	8
GS-14	11	11
OTHER GS	49	49
TOTAL	70	70

POWER SYSTEMS DIVISION

	75	76
EXCEPTED	1	1
GS-15	6	6
GS-14	20	20
OTHER GS	64	64
TOTAL	91	91

PHYSICAL SCIENCE DIVISION

	75	76
EXCEPTED	1	1
GS-16	1	1
GS-15	9	9
GS-14	18	18
OTHER GS	53	53
TOTAL	82	82

MATERIALS AND STRUCTURES DIVISION

	75	76
EXCEPTED	1	1
GS-16	1	1
GS-15	10	10
GS-14	19	19
OTHER GS	74	74
TOTAL	105	105

CHEMICAL ENERGY DIVISION

	75	76
EXCEPTED	1	1
GS-15	3	3
GS-14	7	7
OTHER GS	61	61
TOTAL	72	72

DIRECTOR OF ENGINEERING SERVICES

	75	76
EXCEPTED	1	1
OTHER GS	1	1
TOTAL	2	2

ENGINEERING DESIGN DIVISION

	75	76
GS-15	4	4
GS-14	10	10
OTHER GS	105	105
TOTAL	119	119

FACILITIES ENGINEERING DIVISION

	75	76
GS-15	4	4
GS-14	8	8
OTHER GS	85	85
TOTAL	97	97

PERSONNEL DIVISION

	75	76
GS-15	1	1
GS-14	2	2
OTHER GS	37	37
TOTAL	40	40

COMPUTER SERVICES DIVISION

	75	76
EXCEPTED	1	1
GS-15	3	3
GS-14	6	6
OTHER GS	125	125
WB	17	17
TOTAL	152	152

DIRECTOR OF ADMINISTRATION

	75	76
EXCEPTED	1	1
OTHER GS	5	5
TOTAL	6	6

SAFETY AND PROJECT PLANNING OFFICE

	75	76
GS-14	1	1
OTHER GS	46	46
WB	6	6
TOTAL	53	53

OFFICES

	75	76
GS-15	3	3
GS-14	7	7
OTHER GS	20	20
TOTAL	30	30

RESOURCES & FINANCIAL MANAGEMENT DIVISION

	75	76
EXCEPTED	1	1
GS-14	4	4
OTHER GS	40	40
TOTAL	45	45

PROCUREMENT DIVISION

	75	76
EXCEPTED	1	1
GS-14	3	3
OTHER GS	91	91
TOTAL	95	95

MANAGEMENT SERVICES DIVISION

	75	76
GS-14	1	1
OTHER GS	19	19
WB	11	11
TOTAL	31	31

DIRECTOR OF TECHNICAL SERVICES

	75	76
EXCEPTED	1	1
GS-15	1	1
OTHER GS	1	1
TOTAL	3	3

TEST INSTALLATIONS DIVISION

	75	76
OTHER GS	10	10
WB	439	439
TOTAL	449	449

FACILITIES OPERATIONS AND MAINTENANCE DIVISION

	75	76
GS-14	2	2
OTHER GS	34	34
WB	221	221
TOTAL	257	257

FABRICATION DIVISION

	75	76
GS-14	2	2
OTHER GS	35	35
WB	171	171
TOTAL	208	208

EQUIPMENT AND SUPPLY DIVISION

	75	76
GS-14	1	1
OTHER GS	42	42
WB	84	84
TOTAL	127	127

DIRECTOR OF LAUNCH VEHICLES

	75	76
EXCEPTED	2	2
GS-15	1	1
GS-14	1	1
OTHER GS	4	4
TOTAL	8	8

BUSINESS MANAGEMENT OFFICE

	75	76
GS-14	1	1
OTHER GS	10	10
TOTAL	11	11

PROGRAM INTEGRATION OFFICE

	75	76
GS-15	3	3
GS-14	12	12
OTHER GS	30	30
TOTAL	45	45

VEHICLES ENGINEERING DIVISION

	75	76
EXCEPTED	1	1
GS-14	18	18
OTHER GS	61	61
TOTAL	80	80

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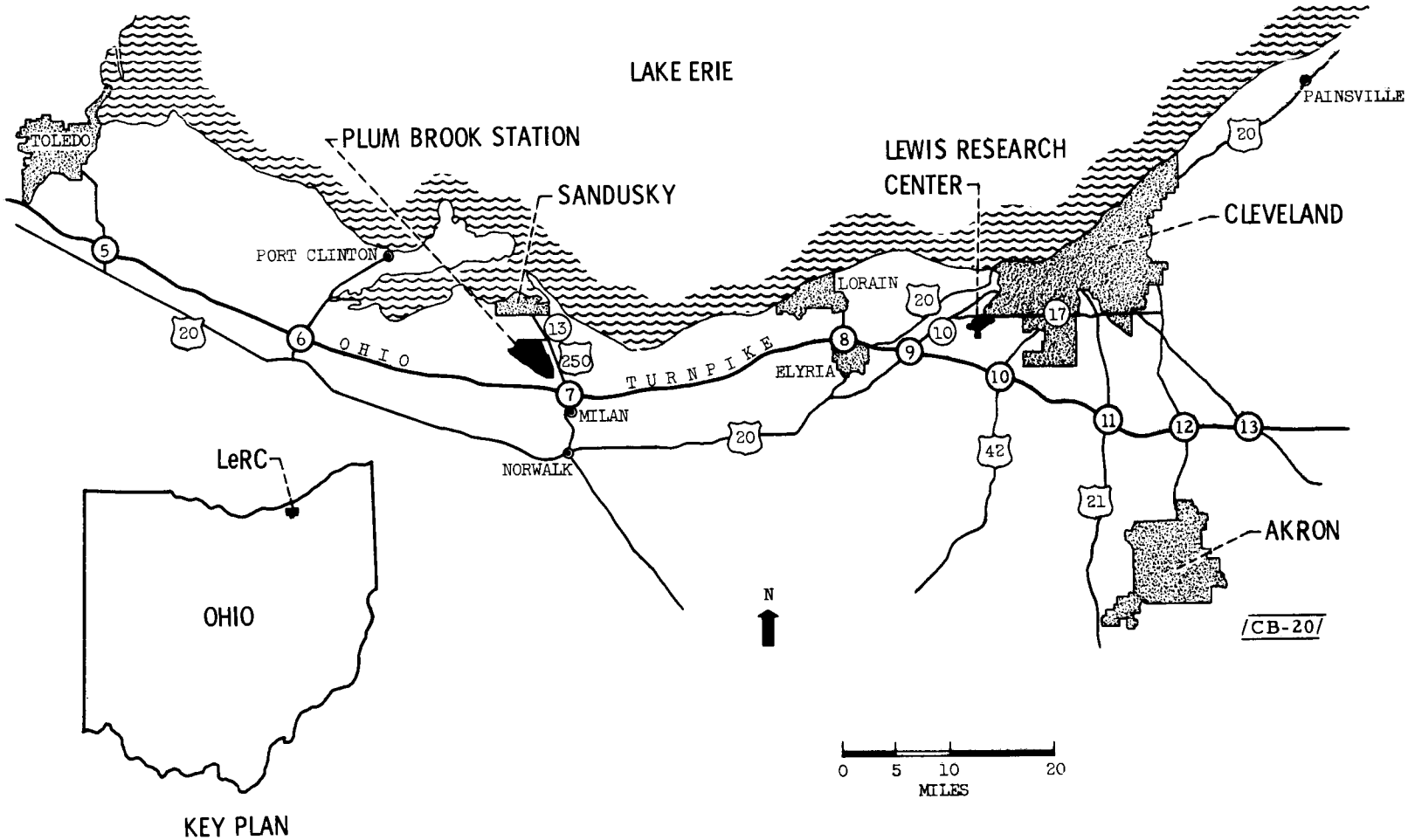
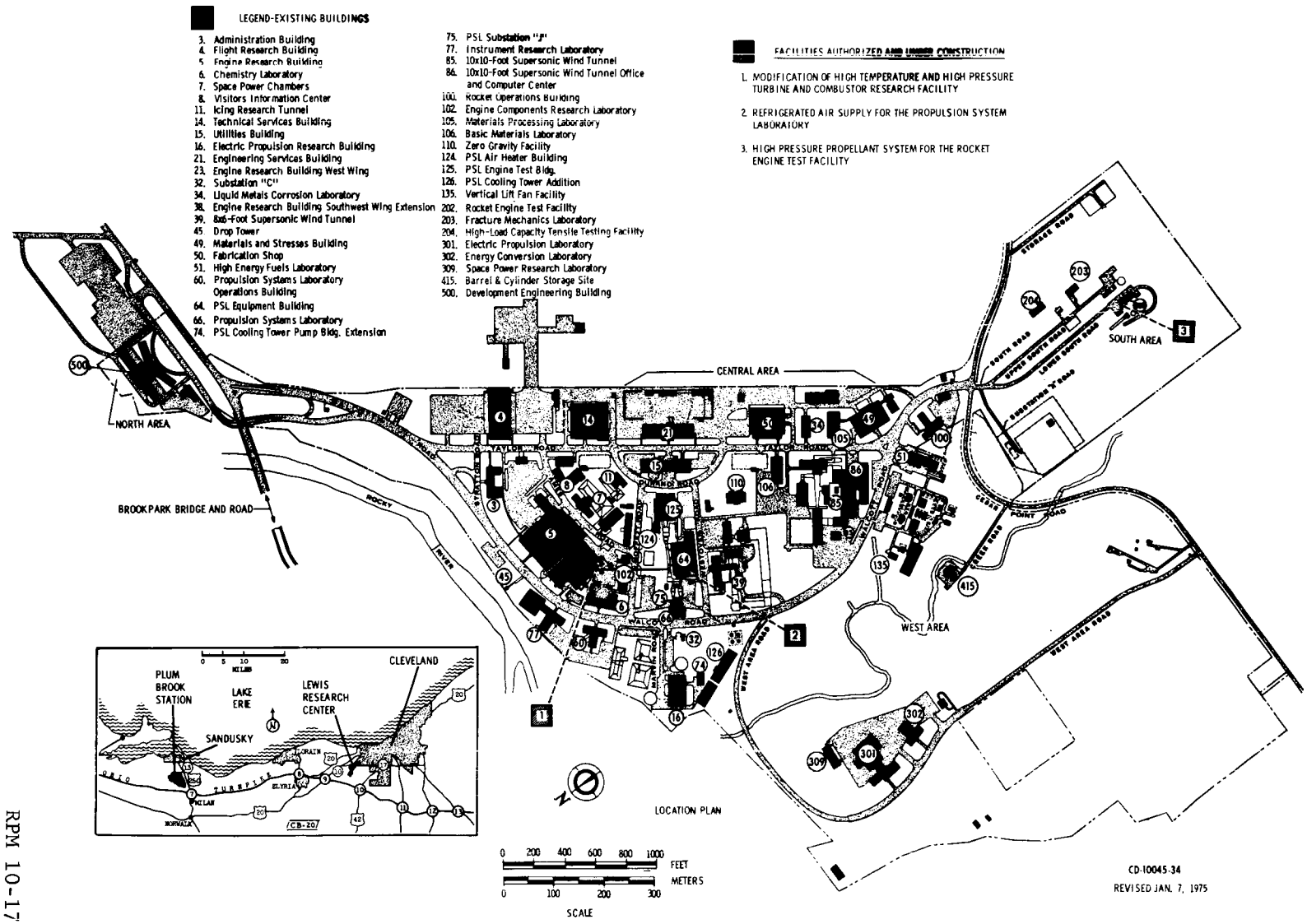
LEWIS RESEARCH CENTER
FISCAL YEAR 1976 ESTIMATES

AREA MAP

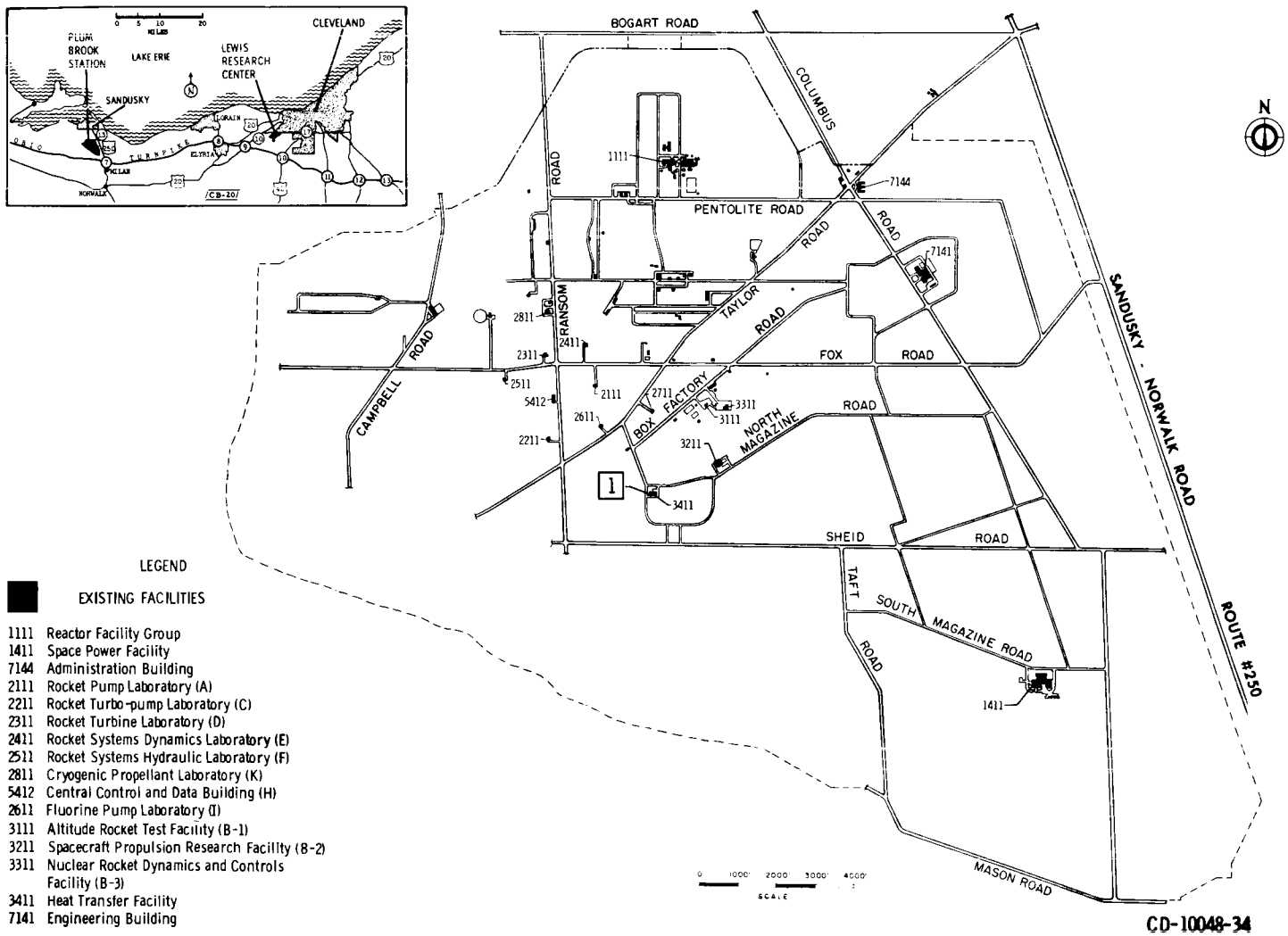


LEWIS RESEARCH CENTER
FISCAL YEAR 1976 ESTIMATES
LOCATION PLAN



LEWIS RESEARCH CENTER
PLUM BROOK STATION
FISCAL YEAR 1976 ESTIMATES

LOCATION PLAN



LEGEND

EXISTING FACILITIES

1111 Reactor Facility Group
1411 Space Power Facility
7144 Administration Building
2111 Rocket Pump Laboratory (A)
2211 Rocket Turbo-pump Laboratory (C)
2311 Rocket Turbine Laboratory (D)
2411 Rocket Systems Dynamics Laboratory (E)
2511 Rocket Systems Hydraulic Laboratory (F)
2811 Cryogenic Propellant Laboratory (K)
5412 Central Control and Data Building (H)
2611 Fluorine Pump Laboratory (I)
3111 Altitude Rocket Test Facility (B-1)
3211 Spacecraft Propulsion Research Facility (B-2)
3311 Nuclear Rocket Dynamics and Controls Facility (B-3)
3411 Heat Transfer Facility
7141 Engineering Building

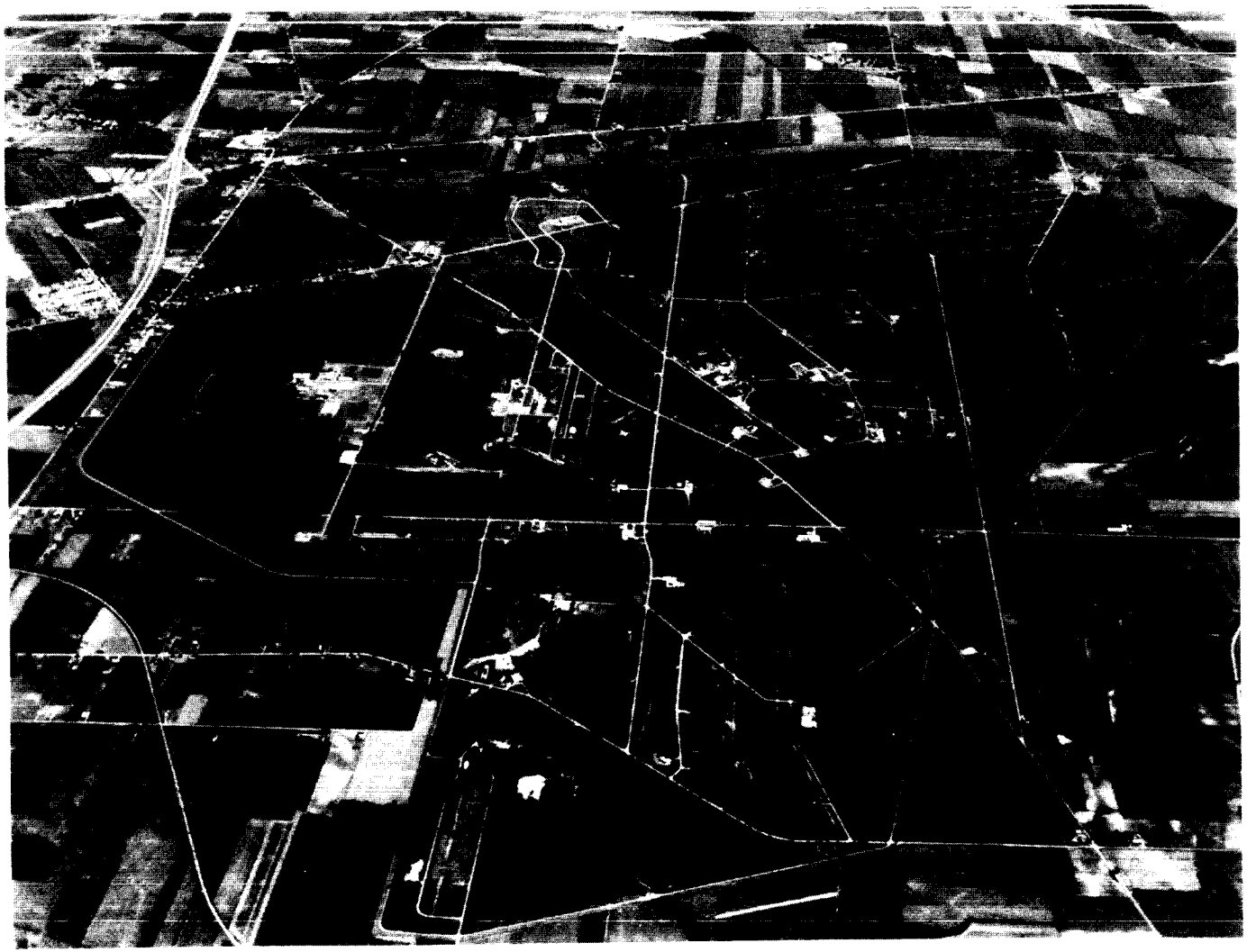
LEWIS RESEARCH CENTER
FISCAL YEAR 1976 ESTIMATES

CLEVELAND FACILITIES

C-74-3586

LEWIS RESEARCH CENTER
FISCAL YEAR 1976 ESTIMATES

PLUM BROOK FACILITIES



C-71-3057

RESEARCH AND PROGRAM MANAGEMENT

FISCAL YEAR 1976 ESTIMATES

NASA HEADQUARTERS

DESCRIPTION

The NASA Headquarters is located at 400 Maryland Avenue, S.W., Washington, D.C., and also occupies other buildings in the District of Columbia and nearby Virginia. Personnel primarily occupy Government-owned buildings.

MISSION

The mission of the National Aeronautics and Space Administration Headquarters is to plan and provide executive direction for the programs authorized by the Congress, and to implement the national objectives stated in the National Aeronautics and Space Act of 1958, as amended. The principal statutory functions are:

1. To conduct research into, and for the solution of, problems of flight within and outside the earth's atmosphere and to develop, construct, test and operate aeronautical and space vehicles for research purposes.

2. To conduct activities required for the exploration of space with manned and unmanned vehicles.

3. To arrange for participation by the scientific community in planning scientific measurements and observations to be made through the use of aeronautical and space vehicles, and conduct or arrange for the conduct of such measurements and observations.

4. To provide for the widest practicable and appropriate dissemination of information concerning its activities and their results.

The following offices at Headquarters assist management in carrying out the technical aspects of this mission:

Office of Manned Space Flight - Responsible for the research, development and operations of manned space flight program including the scheduled Apollo Soyuz Test Project mission in mid-1975 and the Space Shuttle, the essential element of the space transportation system that will be used to conduct the space operations of the 1980's. The space transportation system consists of the Shuttle, a reusable manned vehicle; the Spacelab, an experiments payload carrier being developed by the Europeans; and an upper stage required for high energy missions beyond the basic Shuttle capabilities. An Interim Upper Stage will be developed by the U.S. Air Force to be followed later in the 1980's by a Space Tug.

Office of Space Science - Responsible for the NASA automated space flight program directed toward scientific investigations of the solar system utilizing ground-based, airborne, and space techniques including sounding rockets, earth satellites, and deep space probes; for scientific experiments to be conducted by man in space and for the scientific training of astronauts and for the development, procurement and use of light and medium class launch vehicles.

Office of Applications - Responsible for research and development activities leading to programs providing beneficial applications of space systems, the space environment, and space related or derived technology. Programs include investigation of weather and climate, pollution monitoring, earth resources surveys and earth and ocean physics applications; the use of the space environment for manufacturing; and the application of space developed technology to communications and other domestic problems.

Office of Aeronautics and Space Technology - Responsible for the planning, direction, execution, evaluation, documentation, and dissemination of the results of all NASA research and technology programs that are conducted primarily to demonstrate the feasibility of a concept, structure, component, or system which may have application to the nation's overall aeronautical and space objectives. This office is also responsible for coordinating the Agency's total program of supporting research and technology related to carrying out specific flight missions in order to avoid unnecessary duplication and to insure an integrated and balanced agency research program.

Office of Tracking and Data Acquisition - Responsible for the development, implementation, and operation of tracking, data acquisition, communications, and data processing facilities, systems, and services required for NASA flight programs. The office also has NASA-wide responsibility for administrative communications and frequency management.

The NASA Pasadena Office, Pasadena, California, is a component field activity of the NASA Headquarters. Its primary responsibilities are to negotiate and administer NASA contracts for the operation of the Jet Propulsion Laboratory and to provide patent and technology utilization services as they relate to prime and subcontracts at the Jet Propulsion Laboratory.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

Functions	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
I. Personnel and Related Costs.....	$43,455	$43,914	$45,008	$45,781	$13,683
II. Travel.....	2,433	2,615	2,299	2,465	701

Functions	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
III. Facilities Services..	447	4,240	4,037	4,105	1,100
IV. Technical Services...	11,034	10,647	10,271	10,561	2,786
V. Administrative Support.....	5,659	5,917	6,597	6,581	1,754
Total, fund requirements....	$63,028	$67,333	$68,212	$69,493	$20,024

Distribution of Permanent Positions by Program

The following table summarizes the actual and planned utilization of positions for direct program activity and for indirect support.

Direct Positions					
Manned Space Flight					
Space Shuttle.....	65	68	75	80	80
Space flight operations	123	129	109	104	104
Advanced missions.....	21	21	21	21	21
Space Science					
Physics and astronomy	57	78	56	56	56
Lunar and planetary exploration.....	38	52	37	37	37
Launch vehicle procurement.....	19	29	19	19	19
Applications					
Space applications...	99	94	97	97	97
Aeronautics and Space Technology.....					
Aeronautical research and technology.....	76	76	76	76	76
Space and nuclear research and technology.....	52	75	49	49	49

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
Energy Programs					
Energy technology applications.....	15	---	22	22	22
Tracking and Data Acquisition.....	46	52	45	45	45
Technology Utilization..	21	22	18	18	18
Subtotal, direct positions.....	632	696	624	624	624
Indirect Positions					
Administrator and staff.	165	178	163	163	163
Agency-wide management.	599	525	591	591	591
Headquarters administration.....	195	192	192	192	192
Subtotal, indirect positions.....	959	895	946	946	946
Total Positions.....	1,591	1,591	1,570	1,570	1,570

PERSONNEL AND RELATED COSTS

I. PERSONNEL AND RELATED COSTS.....	$43,455	$43,914	$45,008	$45,781	$13,683
Basis of Fund Requirements					
A. Compensation and Benefits:					
1. Compensation:					
a. Permanent positions...	$36,748	$37,429	$38,374	$38,393	$9,714
b. Nonpermanent positions...	994	703	709	726	242

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	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
1. Compensation:					
c. Reimbursable detailees	351	530	379	385	96
d. Overtime and other compensation....	166	224	235	239	60
Subtotal, Compensation.....	$38,259	$38,886	$39,697	$39,743	$10,112
2. Benefits	$4,465	$4,323	$4,518	$5,271	$3,295
Subtotal, Compensation and Benefits.....	$42,724	$43,209	$44,215	$45,014	$13,407
B. Supporting Costs:					
1. Transfer of personnel	$229	$270	$280	$280	$90
2. Civil Service Commission services.....	145	56	126	136	36
3. Personnel training...	357	379	387	351	150
Subtotal, Supporting Costs.....	$731	$705	$793	$767	$276
Total, Personnel and Related Costs.....	$43,455	$43,914	$45,008	$45,781	$13,683

Basis of Cost for Permanent Positions FY 1976
(Thousands of Dollars)

Cost of permanent positions in 1975.....		$38,374
Cost of increases in 1976.....		+1,548
Within grade advances and career development:		
Full year effect of 1975 actions.....	+$484	
Partial year effect of 1976 actions.....	+470	
Additional extra day in 1976.....	+145	
Full year effect of October 1974 pay raise.....	+449	
Cost decreases in 1976.....		-1,529
Full year effect of 1975 manpower reductions	-$1,001	
Turnover savings		
Full year effect of 1975 actions.....	-192	
Partial year effect of 1976 actions.....	-336	
Cost of permanent positions in 1976.....		$38,393

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
b. Nonpermanent Positions					
1. Cost.....	$994	$703	$709	$726	$242
2. Number of manyears.....	97	79	87	87	29

The 1976 estimate will support the following programs at approximately the levels indicated below:

Distribution of Nonpermanent Manyears by Program

	Manyears
College cooperative training.....	10
Summer employment.....	19
Opportunity programs.....	44
Other temporary employment.....	14
Total.....	87

The current estimate for 1975 increases from the 1975 budget estimate to reflect the cost of the October 1974 pay raise and a restructuring of the temporary employment program to place more emphasis on the Coop and opportunity programs while reducing the size of the summer program. The 1976 estimate reflects the full year cost of these actions.

c. Reimbursable Detailees.....	$351	$530	$379	$385	$96

The current estimate for 1975 is decreased from the 1975 budget estimate due to a reduction in the number of detailees from 20 to 14. The resulting savings is partially offset by the cost of the October 1974 pay raise. The increase in 1976 reflects the full year cost of the pay raise.

d. Overtime and other compensation.....	$166	$224	$235	$239	$60

The current estimate for 1975 is increased from the 1975 budget estimate due to the October 1974 pay raise. The increase in 1976 reflects the full year cost of the pay raise.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
2. Benefits.....	$4,465	$4,323	$4,518	$5,271	$3,295

The following table indicates the cost of personnel benefits by the major catetories:

Category of Cost					
Contribution to the Civil Service Retirement Fund.....	$2,552	$2,620	$2,655	$2,661	$693
Contribution for employee life insurance.....	132	138	137	139	35
Contribution for employee health insurance.....	336	290	451	577	126
FICA.....	39	43	42	44	15
Incentive awards.....	52	51	52	53	13
Workmen's compensation..	1,266	1,181	1,181	1,797	2,413
Severance pay.....	88	---	---	---	---
Total.....	$4,465	$4,323	$4,518	$5,271	$3,295

The current estimate for 1975 has increased over the 1975 budget due to the large increase in the cost of health benefits services. In addition, there was a 20% increase in the Government's contribution to the Federal Health Benefits Program effective January 1975. The increase in 1976 reflects the full year cost of these actions and the higher cost of workmen's compensation funded by NASA Headquarters for the entire agency, which represents amounts for which NASA has been billed by the Labor Department pursuant to law.

B. Supporting Costs.....	$731	$705	$793	$767	$276

Supporting Personnel Costs provide for the expense of moving employees to a new duty station, for Civil Service Commission services which are funded by NASA Headquarters for the entire agency, and for the training of employees.

1. Transfer of personnel.....	$229	$270	$280	$280	$90

The 1975 and 1976 program remains essentially constant, providing for 28 moves each year. Both the current estimate for 1975, and the 1976 estimate, however, reflect the increased cost associated with moving expenses.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
2. Civil Service Commission services.....	$145	$56	$126	$136	$36

The current estimate for 1975 is increased from the 1975 budget estimate due primarily to the cost of Equal Employment Opportunity (EEO) investigations. The increase in 1976 provides for the higher cost of services provided by the Civil Service Commission. These services include investigations, recruitment, advertising, career maturity surveys, and discrimation complaint investigations.

3. Personnel Training.....	$357	$379	$387	$351	$150

The current estimate for 1975 is increased from the 1975 budget estimate due to the higher cost of tuition, with no change in the level of training activity. The decrease in 1976 reflects a reduction in the number of contractual training programs.

TRAVEL

II. TRAVEL.....	$2,433	$2,615	$2,299	$2,465	$701

Approximately 37% of the travel funds are used in direct support of NASA's research and development programs, such as the Space Shuttle, the Viking mission to Mars, and the Apollo Soyuz Test Project. Additional requirements include travel by unpaid members of research advisory committees, travel by NASA officials to national and international conferences and working panels, and travel by NASA management to the field installations reporting to NASA Headquarters to review center requirements and operations to assure agency policies and procedures are being implemented properly throughout the agency.

The current estimate for 1975 is decreased from the 1975 budget estimate to reflect the recent legislation limiting federal travel expenses. Travel requirements for 1976 are estimated at the 1975 level, and adjusted to take into account increased air tariffs.

Summary of Travel by Major Category

A. Program travel.....	$856	$888	$855	$925	$270
B. Meetings and Technical seminars...	807	911	713	771	223
C. Administrative travel..	770	816	731	769	208
Total, Travel.....	$2,433	$2,615	$2,299	$2,465	$701

FACILITIES SERVICES

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
III. FACILITIES SERVICES....	$447	$4,240	$4,037	$4,105	$1,100

Basis of Fund Requirements

Summary of Facilities Services

A. Rental of Real Property	$52	$3,993	$3,585	$3,643	$983
B. Maintenance and Related Services					
1. Maintenance of buildings and grounds.....	$227	$108	$300	$300	$75
2. Maintenance of equipment	9	9	3	3	1
3. Custodial services.....	124	128	145	155	40
Subtotal.....	$360	$245	$448	$458	$116
C. Operation of Facilities					
1. Supplies and equipment	$35	$2	$4	$4	$1
Total, Facilities Services.....	$447	$4,240	$4,037	$4,105	$1,100
A. Rental of Real Property...	$52	$3,993	$3,585	$3,643	$983

The current estimate for 1975 is decreased from the 1975 budget estimate due to a reduction in the rates charged by the General Services Administration for the building space which houses NASA Headquarters. The increase in 1976 reflects the relocation of the NASA Scientific and Technical Information Facility (STIF) from its current location in College Park, Maryland to facilities at Baltimore Washington International Airport.

B. Maintenance and Related Services.....	$360	$245	$448	$458	$116
1. Maintenance of buildings and grounds.....	$227	$108	$300	$300	$75

The current estimate for 1975 is increased from the 1975 budget estimate due primarily to the cost of rearranging office space for better utilization and to accommodate the organizational realignments recently effected at NASA Headquarters.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
2. Maintenance of equipment.....	$9	$9	$3	$3	$1

The current estimate for 1975 is decreased from the 1975 budget estimate due to transfer of security alarm maintenance responsibility from a NASA contractor to the General Services Administration (GSA) with a resulting reduction in costs for the same level of service. The 1976 estimate provides for the same level of service as 1975.

3. Custodial services.....	$124	$128	$145	$155	$40

The current estimate for 1975 is increased from the 1975 budget estimate due to the higher cost of GSA-supplied guard services and the addition of one more guard. The increase in 1976 provides for the full year cost of the increased hourly rate and the additional guard.

C. Operation of Facilities...	$35	$2	$4	$4	$1

The current estimate for 1975 is increased from the 1975 budget estimate to cover replacement of outdated medical equipment in the Headquarters Health Unit.

TECHNICAL SERVICES

IV. TECHNICAL SERVICES....	$11,034	$10,647	$10,271	$10,561	$2,786

Basis of Fund Requirements

Summary of Technical Services

A. Automatic Data Processing

1. Equipment.....	$1,010	$1,121	$1,042	$1,354	$336

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
2. Programming and operation services	2,082	1,783	1,889	1,811	455
Subtotal.....	$3,092	$2,904	$2,931	$3,165	$791
B. Engineering Services...	$14	$57	$67	$140	$36
C. Scientific and Technical Information and Educational Programs					
1. Operation of NASA technical libraries	$48	$49	$52	$56	$16
2. Educational/informational programs...	2,070	1,990	2,052	1,835	484
3. Scientific and technical information.	5,810	5,647	5,169	5,365	1,459
Subtotal.....	$7,928	$7,686	$7,273	$7,256	$1,959
Total, Technical Services.....	$11,034	$10,647	$10,271	$10,561	$2,786
A. Automatic Data Processing.....	$3,092	$2,904	$2,931	$3,165	$791

The current estimate for 1975 is increased from the 1975 budget estimate. This is the net effect of contract wage increases and postponing the acquisition of new computer equipment because of more urgent fund requirements in other areas.

The increase in 1976 reflects the planned procurement of additional computer storage and data processing capability required to meet operational requirements. This is partially offset by a reduction in the level of contract support.

B. Engineering Services...	$14	$57	$67	$140	$36

The current estimate for 1975 is increased from the 1975 budget estimate to provide for publishing a Semi-Conductor Experience Handbook, which was not included in the 1975 budget. The 1976 increase is to provide for studies into the expanding field of semi-conductors; preparation of NASA-Wide Safety, Reliability and Quality Assurance Standards; and costs associated with compliance with the Occupational Safety and Health Act.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
C. Scientific and Technical Information and Educational Programs.....	$7,928	$7,686	$7,273	$7,256	$1,959

Included in these programs are the costs of the technical libraries, educational/informational programs, and the scientific and technical information services. The costs are summarized as follows:

1. Operation of technical libraries.....	$48	$49	$52	$56	$16

The current estimate for 1975 is increased from the 1975 budget estimate due to higher prices for books, subscriptions, pamphlets, and other periodicals for the NASA Headquarters Technical Library. The increase in 1976 reflects the full year cost of these increases.

2. Educational/informational programs..	$2,070	$1,990	$2,052	$1,835	$484

The current estimate for 1975 is increased from the 1975 budget estimate due to higher costs for motion picture services. The 1976 estimate reflects a reduction in the level of activity for exhibit and news services.

3. Scientific and technical information.....	$5,810	$5,647	$5,169	$5,365	$1,459

The current estimate for 1975 is decreased from the 1975 budget estimate to reflect the realignment of the support contract funding plan for operation of the NASA Scientific and Technical Information Facility (STIF). The increase in 1976 is due primarily to contract wage increases partially offset by a reduction in the level of contractor support.

V. ADMINISTRATIVE SUPPORT.....	$5,659	$5,917	$6,597	$6,581	$1,754

Basis of Fund Requirements

Summary of Administrative Support

A. Communications

1. Leased lines and long distance tolls.....	$628	$697	$549	$561	$142

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	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
2. Local telephone services.....	317	425	425	400	100
3. Other communications.	1,710	2,354	2,336	2,243	618
Subtotal.....	$2,655	$3,476	$3,310	$3,204	$860
B. Administrative Printing.....	$394	$324	$398	$405	$102
C. Supplies, Materials, and Equipment.....	$731	$411	$806	$877	$230
D. Transportation					
1. Center operations....	$84	$85	$105	$126	$32
2. Common carrier.....	22	18	10	25	5
Subtotal.....	$106	$103	$115	$151	$37
E. Administrative Support Services					
1. Installation support services.....	$1,587	$1,407	$1,767	$1,741	$472
2. Medical services.....	186	196	201	203	53
Subtotal.....	$1,773	$1,603	$1,968	$1,944	$525
Total Administrative Support.....	$5,659	$5,917	$6,597	$6,581	$1,754
A. Communications	$2,655	$3,476	$3,310	$3,204	$860

The current estimate for 1975 is decreased from the 1975 budget estimate due to a reduction in the NASA Headquarters share of the Agency's bill for Federal Telecommunications System (FTS) lines. The reduction in 1976 is due primarily to an estimated decrease in the number of Agency mailings, thereby reducing the postal costs which are funded by NASA Headquarters for the entire Agency.

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
		(Thousands of Dollars)			
B. Administrative Printing...	$394	$324	$398	$405	$102

The increased current estimate for 1975 over the budget estimate reflects increased printing costs. The 1976 estimate provides for the full year cost of the increases.

C. Supplies, Materials and Equipment.....	$731	$411	$806	$877	$230

The current estimate for 1975 is increased from the 1975 budget estimate to reflect current operating requirements. The increase in 1976 is to provide for updating the avionics equipment on the administrative aircraft.

D. Transportation.....	$106	$103	$115	$151	$37

The current estimate for 1975 is increased from the 1975 budget estimate due primarily to higher contract costs for maintenance of the JPL administrative aircraft, which is funded by the NASA Pasadena Office. The 1976 increase reflects the contract cost of installation of FAA required avionics equipment in the JPL administrative aircraft and the cost of charter service while the aircraft is down for this installation, as well as the increased cost for freight, express and drayage at NASA Headquarters.

E. Administrative Support Services.....	$1,773	$1,603	$1,968	$1,944	$525

The current estimate for 1975 is increased from the 1975 budget estimate to provide for Equal Employment Opportunity and Minority Business programs which were not included in the 1975 Budget. In addition, it reflects the increased assessment for NASA's share of the cost of the Civil Service Commission Information Center and for increases in the cost of contract labor services and printing plant maintenance. The 1976 estimate provides for continuing the 1975 level of activity adjusted for the phasedown in requirements for Russian language interpreters in the connection with completion of the Apollo Soyuz Test Project.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
ORGANIZATION AND STAFFING
NASA HEADQUARTERS

STAFFING SUMMARY

	FY 75	FY 76
Excepted	183	183
GS-16	18	18
GS-15	358	358
GS-14	227	227
All Other GS	775	775
Wage Board	9	9
Total Perm.	1570	1570

ADMINISTRATOR

	FY 75	FY 76
Excepted	8	8
GS-16	-	-
GS-15	6	6
GS-14	3	3
All Other GS	24	24
Wage Board	1	1
Total Perm.	42	42

(AD HOC)

AEROSPACE SAFETY ADVISORY PANEL

	FY 75	FY 76
Excepted	-	-
GS-16	-	-
GS-15	-	-
GS-14	-	-
All Other GS	-	-
Wage Board	-	-
Total Perm.	-	-

ORGANIZATION AND MANAGEMENT

	FY 75	FY 76
Excepted	5	5
GS-16	1	1
GS-15	26	26
GS-14	18	18
All Other GS	35	35
Wage Board	-	-
Total Perm.	85	85

PROCUREMENT

	FY 75	FY 76
Excepted	2	2
GS-16	-	-
GS-15	17	17
GS-14	19	19
All Other GS	32	32
Wage Board	-	-
Total Perm.	70	70

INTERNATIONAL AFFAIRS

	FY 75	FY 76
Excepted	5	5
GS-16	-	-
GS-15	2	2
GS-14	2	2
All Other GS	17	17
Wage Board	-	-
Total Perm.	26	26

COMPTROLLER

	FY 75	FY 76
Excepted	10	10
GS-16	1	1
GS-15	24	24
GS-14	32	32
All Other GS	98	98
Wage Board	-	-
Total Perm.	165	165

DOD & INTERAGENCY AFFAIRS

	FY 75	FY 76
Excepted	3	3
GS-16	-	-
GS-15	4	4
GS-14	1	1
All Other GS	5	5
Wage Board	-	-
Total Perm.	13	13

PUBLIC AFFAIRS

	FY 75	FY 76
Excepted	6	6
GS-16	-	-
GS-15	10	10
GS-14	13	13
All Other GS	43	43
Wage Board	-	-
Total Perm.	72	72

EQUAL OPPORTUNITY PROGRAMS

	FY 75	FY 76
Excepted	1	1
GS-16	-	-
GS-15	1	1
GS-14	2	2
All Other GS	18	18
Wage Board	-	-
Total Perm.	22	22

LEGISLATIVE AFFAIRS

	FY 75	FY 76
Excepted	3	3
GS-16	-	-
GS-15	4	4
GS-14	2	2
All Other GS	18	18
Wage Board	1	1
Total Perm.	28	28

GENERAL COUNSEL

	FY 75	FY 76
Excepted	6	6
GS-16	-	-
GS-15	11	11
GS-14	3	3
All Other GS	20	20
Wage Board	-	-
Total Perm.	40	40

UNIVERSITY AFFAIRS

	FY 75	FY 76
Excepted	1	1
GS-16	-	-
GS-15	4	4
GS-14	2	2
All Other GS	5	5
Wage Board	-	-
Total Perm.	12	12

ASSOCIATE ADMINISTRATOR

	FY 75	FY 76
Excepted	1	1
GS-16	-	-
GS-15	-	-
GS-14	-	-
All Other GS	6	6
Wage Board	-	-
Total Perm.	7	7

INDUSTRY AFFAIRS AND TECHNOLOGY UTILIZATION

	FY 75	FY 76
Excepted	8	8
GS-16	-	-
GS-15	19	19
GS-14	18	18
All Other GS	35	35
Wage Board	-	-
Total Perm.	80	80

ASSOCIATE ADMINISTRATOR FOR CENTER OPERATIONS

	FY 75	FY 76
Excepted	3	3
GS-16	-	-
GS-15	4	4
GS-14	13	13
All Other GS	16	16
Wage Board	-	-
Total Perm.	36	36

ENERGY PROGRAMS

	FY 75	FY 76
Excepted	5	5
GS-16	-	-
GS-15	10	10
GS-14	-	-
All Other GS	7	7
Wage Board	-	-
Total Perm.	22	22

APPLICATIONS

	FY 75	FY 76
Excepted	18	18
GS-16	-	-
GS-15	29	29
GS-14	10	10
All Other GS	40	40
Wage Board	-	-
Total Perm.	97	97

AERONAUTICS AND SPACE TECHNOLOGY

	FY 75	FY 76
Excepted	17	17
GS-16	5	5
GS-15	42	42
GS-14	15	15
All Other GS	46	46
Wage Board	-	-
Total Perm.	125	125

MANNED SPACE FLIGHT

	FY 75	FY 76
Excepted	32	32
GS-16	5	5
GS-15	77	77
GS-14	20	20
All Other GS	71	71
Wage Board	-	-
Total Perm.	205	205

SPACE SCIENCE

	FY 75	FY 76
Excepted	27	27
GS-16	3	3
GS-15	33	33
GS-14	7	7
All Other GS	42	42
Wage Board	-	-
Total Perm.	112	112

TRACKING AND DATA ACQUISITION

	FY 75	FY 76
Excepted	11	11
GS-16	3	3
GS-15	8	8
GS-14	6	6
All Other GS	17	17
Wage Board	-	-
Total Perm.	45	45

INSTITUTIONAL MANAGEMENT

	FY 75	FY 76
Excepted	4	4
GS-16	-	-
GS-15	11	11
GS-14	21	21
All Other GS	104	104
Wage Board	7	7
Total Perm.	147	147

PERSONNEL PROGRAMS

	FY 75	FY 76
Excepted	5	5
GS-16	-	-
GS-15	8	8
GS-14	15	15
All Other GS	53	53
Wage Board	-	-
Total Perm.	81	81

SYSTEMS MANAGEMENT

	FY 75	FY 76
Excepted	2	2
GS-16	-	-
GS-15	8	8
GS-14	5	5
All Other GS	23	23
Wage Board	-	-
Total Perm.	38	38

RESEARCH AND PROGRAM MANAGEMENT

FISCAL YEAR 1976 ESTIMATES

JET PROPULSION LABORATORY

DESCRIPTION

The Jet Propulsion Laboratory is located in Pasadena, California, approximately 20 miles north of downtown Los Angeles. Subsidiary facilites are located at Goldstone, California (tracking and data acquisition), Edwards Air Force Base, California (propellant formulation and testing), and Table Mountain, California (open air testing and astronomy).

At Pasadena, the Laboratory occupies 176.8 acres of land of which 145.9 acres are owned by NASA and 30.9 acres are leased. At Goldstone, facilities are located on land occupied under the permit from the Army. At Edwards Air Force Base, facilities are located on land occupied under permit from the Air Force. Facilities at Table Mountain are located on land occupied under permit from the Forest Service of the Department of Agriculture. The capital investment of the Jet Propulsion Laboratory, including the Deep Space Network, fixed assets in progress and contractor-held facilities, as of June 30, 1974, was $362,526,000.

MISSION

The Jet Propulsion Laboratory (JPL) is a Government-owned facility managed, staffed, and operated by the California Institute of Technology under a contract with NASA. The entire cost of operating the Laboratory is borne by the Research and Development appropriation, except for the lease or purchase of administrative aircraft and the purchase of passenger motor vehicles, which are funded from the Research and Program Management appropriation and are included in the NASA Headquarters budget presentation. Accordingly, the Research and Program Management type costs presented in this Special Analysis for JPL are for purposes of information only, and are not a part of the NASA Research and Program Management budget request.

The Jet Propulsion Laboratory is engaged principally in research, development, and flight project activities connected with the scientific exploration of the planets and interplanetary space with automated spacecraft. This assignment encompasses a broad range of engineering, scientific, and management functions devoted to:

1. The conduct of complete space flight projects, including overall project management and encompassing all phases of project activity beginning with mission design and scientific justification and following with spacecraft design, development, testing, and flight operations.

2. A continuing program of supporting research and technology.

3. The development, implementation, and operation of the Deep Space Network which provides tracking and data acquisition support for all NASA projects involving flights at planetary and interplanetary distances.

Planetary Exploration - The Mariner series of spacecraft was designed and developed by the Jet Propulsion Laboratory, and the Laboratory has had project management responsibility for all Mariner missions, including the functions of integration, assembly, and testing of the spacecraft. The two most recent missions in the Mariner series are Mariners 9 and 10.

Mariner 9 was placed in orbit about Mars in November 1971.

The Mariner 10 spacecraft was launched in October 1973, and employed the gravity-assist technique to perform successful flybys of both Venus and Mercury during February and March, respectively, of 1974.

The Mariner 10 mission is the first to explore the planet Mercury. The mission is still in progress with the spacecraft operating well and on a flight path which will take it near Mercury again for a third time in March 1975.

The Laboratory is also involved as a major participant in the Viking project which will launch two flights to Mars in mid-1975. Each flight will employ a spacecraft consisting of an orbiter and a lander. The NASA Langley Research Center has overall management responsibility for the Viking project and for development of the lander. JPL has responsibility for the development of the orbiter, for the tracking and data acquisition system, and for the mission control and computing center.

In the continuing series of Mariner missions, the Jet Propulsion Laboratory has management responsibility for the Mariner Jupiter/Saturn 1977 mission, which involves two launches in 1977. At that time the relative positions of Jupiter and Saturn are uniquely favorable for the utilization of gravity-assist techniques which will permit the spacecraft in passing near Jupiter to be accelerated to reach Saturn in the relatively short time of 3.5-4 years.

Supporting Research and Technology - The Jet Propulsion Laboratory maintains a strong program of supporting research and advanced technical development designed to provide sound technologies for present and prospective project assignments, and to further the general capabilities of NASA. Areas of involvement include spacecraft advanced development, materials and structures, space power and electric propulsion, chemical propulsion, electronics, and basic research in such fields as fluid physics, polymer materials, and applied mathematics. In addition, the Laboratory participates in scientific experiments on both JPL-managed and non-JPL managed flight projects. This participation includes not only the performance of scientific investigations, but also a significant commitment to the development of scientific instruments

for use in space missions. Ground-based research programs are carried out in planetary sciences, physics and astronomy, and earth and ocean physics. These activities involve broad collaboration with the scientific and academic communities and with staff members from other NASA field installations.

Tracking and Data Acquisition - The Jet Propulsion Laboratory is responsible for the design, development, implementation, maintenance, and operation of NASA's worldwide Deep Space Network. Tracking stations are located in California, Spain, and Australia. These facilities provide support not only to JPL-managed flight missions, but also to projects such as Pioneer and Helios managed by other NASA installations and involving flights at planetary and interplanetary distances.

SUMMARY OF RESOURCES REQUIREMENTS

FUNDS

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Thousands of Dollars)				
I. Personnel and Related Costs.....	$78,750	$80,496	$84,161	$90,648	$24,508
II. Travel.....	2,704	2,502	2,994	3,089	927
III. Facilities Services..	6,141	6,467	7,380	7,982	2,135
IV. Technical Services...	2,037	1,332	2,145	2,210	591
V. Administrative Support.....	8,051	7,676	8,756	9,099	2,434
Total, Fund Requirements...	$97,683	$98,473	$105,436	$113,028	$30,595

Distribution of Permanent Positions by Program

Direct Positions

Manned Space Flight

Space shuttle.....	4	11	7	9	9
Space flight advanced missions.....	6	5	5	5	5
Apollo.....	12	1	3	---	---

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
Space Science					
Physics and astronomy.....	19	16	15	16	16
Lunar and planetary exploration.....	1,134	1,060	1,065	1,027	1,027
Launch vehicle procurement.....	7	9	4	4	4
Applications					
Space applications.....	66	73	113	139	139
Aeronautics and Space Technology					
Aeronautical research and technology.....	45	13	27	14	14
Space and nuclear research and technology.....	203	237	193	218	218
Tracking and Data Acquisition.....	332	342	341	350	350
Technology Utilization.....	10	---	23	24	24
Energy Programs					
Energy technology applications.....	---	---	35	25	25
Subtotal, direct positions	1,838	1,767	1,831	1,831	1,831
Direct support.....	667	703	622	622	622
Indirect positions.....	1,248	1,186	1,203	1,203	1,203
Total positions.....	3,753	3,656	3,656	3,656	3,656

Personnel and Related Costs - The increase in the 1975 current estimate over the 1975 budget estimate, and the increase in the 1976 estimate are a result of cost of living and merit increases for permanent and nonpermanent personnel, plus increased overtime associated with the Viking project. Personnel benefits increased as a result of broader participation in the Teacher Insurance and Annuity (TIAA) retirement plan, and an increase in the FICA base. An increase in supporting personnel costs is associated with moving personnel.

Travel - The increase in the 1975 current estimate over the 1975 budget estimate is a result of higher airline fares, per diem and lodging costs. The increase in 1976 reflects the full year cost of the higher airline fare, per diem and lodging costs.

Facilities Services - The increase in the 1975 current estimate over the 1975 budget estimate and the increase in the 1976 estimate are a result of higher utility costs, and price increases for supplies and equipment and wage increases for maintenance and related services. Another factor affecting the increase in 1976 is the requirement to lease off-site temporary space to house equipment and personnel temporarily displaced by Langley and contractor personnel associated with the Viking project.

Technical Services - As a result of the determination that Electronic Parts Stores is properly an element of the simulated R&PM budget, this function now includes funding for that item for the first time. Electronic Parts Stores was not included in the 1975 budget estimate. The 1975 current estimate and the 1976 budget estimate, however, provides funding for Electronic Parts Stores which accounts for the major part of the increase. Additional increases are in other Engineering services, Automatic Data Processing (ADP) services and equipment, and scientific and technical information.

Administrative Support - As a result of the determination that the administrative costs associated with the Goldstone, California facility is properly an element of the simulated R&PM budget, this function now includes funding for these costs for the first time, and as a result, were not included in the 1975 budget estimate. The 1975 current estimate and the 1976 budget estimate, however, provides funding for these costs which accounts for the major part of the increase. Additional increases are in other administrative costs, communication, printing and reproduction, supplies, material and equipment and transportation.

Transition Period - The transition period estimate represents a continuation of the rate normally experienced during the first quarter of a fiscal year.

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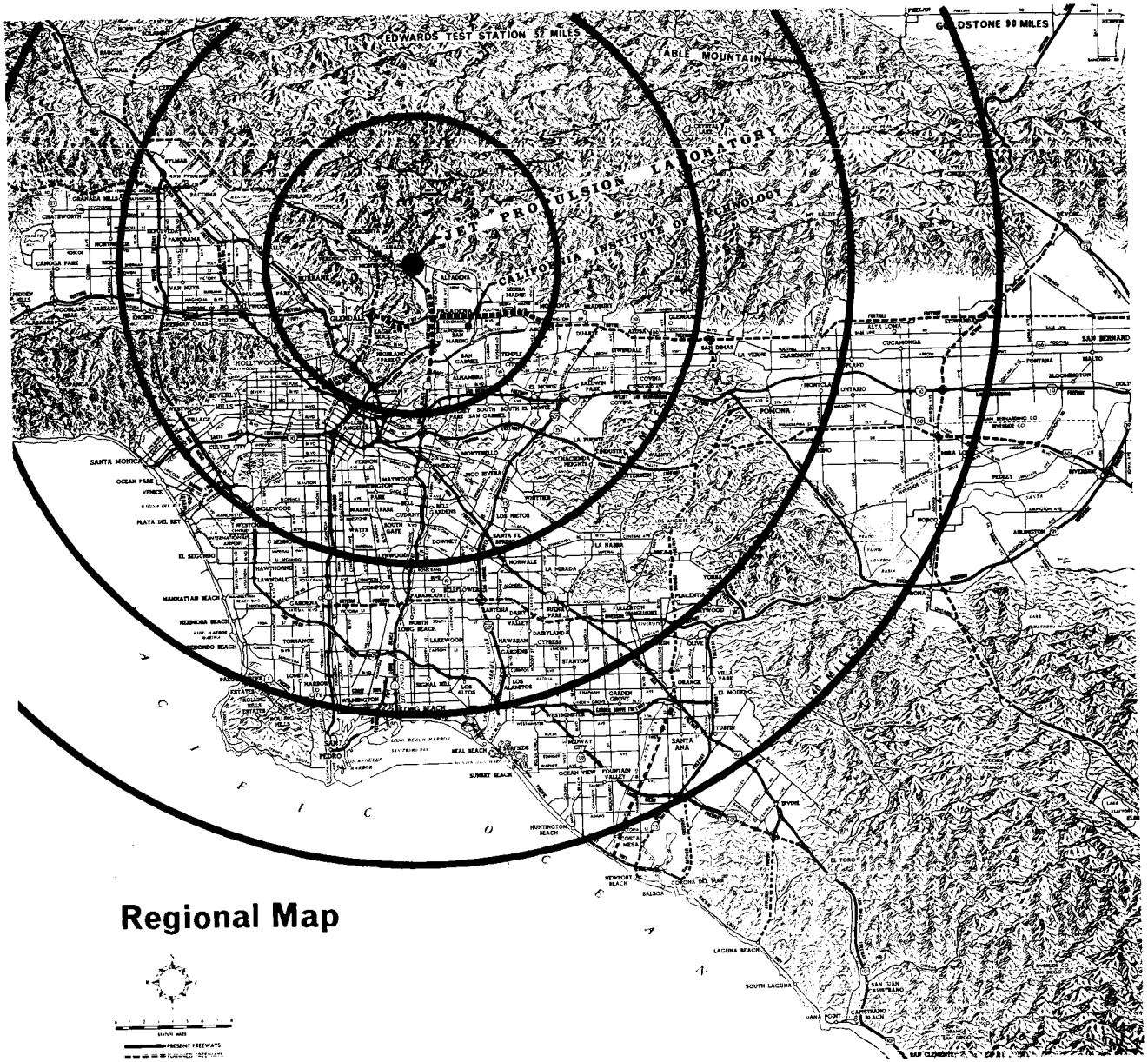
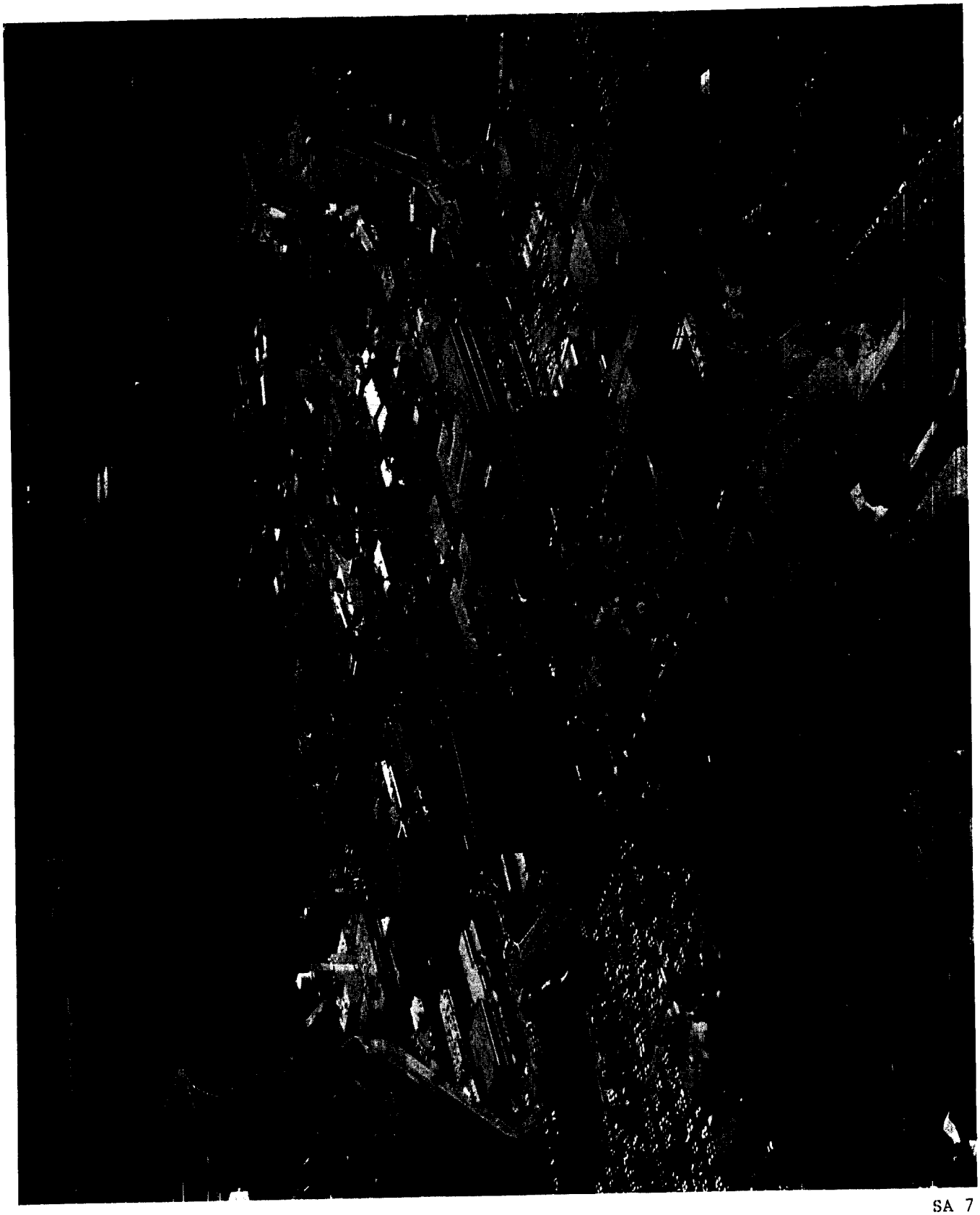


Regional Map



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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1976 AND TRANSITION PERIOD ESTIMATES

SUMMARY OF AERONAUTICAL RESEARCH AND TECHNOLOGY
OFFICE OF AERONAUTICS AND SPACE TECHNOLOGY

	1974	1975 Budget Estimate	1975 Current Estimate	1976	Transition Period
	(Millions of Dollars)				
Research and development.	$168.0	$166.4	$166.4	$175.4	$46.8
Construction of facilities.....	2.4	9.7	9.7	4.6	---
Research and program management.....	132.9	135.1	132.4	134.2	37.0
Total.....	$303.3	$311.2	$308.5	$314.2	$83.8
Number of direct positions (end of year) associated with aeronautical research and technology.....	3,861	3,899	3,786	3,849	3,849

The Aeronautics program for FY 1976 and the transition period will advance aeronautical technology to ensure safer, more economical air transportation systems which are responsive to current and future needs; provide the United States with a strong competitive position in the international market place; and provide technical support to the military in maintaining the superiority of the nation's military aircraft.

Fundamental research in the disciplines of materials, structures, avionics, aerodynamics, propulsion, and man-vehicle interactions will continue in FY 1976 and the transition period to provide the solid technology base necessary to stimulate and meet the future requirements of civil aviation. Special emphasis will be given to reducing aircraft energy consumption and the undesirable environmental effects of noise and atmospheric pollution. The effort is directed at providing the technology for quiet, clean and efficient propulsion systems; the application of active control concepts; advanced materials and structural concepts to reduce aircraft weight; the reduction of aerodynamic drag; and the evaluation of candidate non-petroleum-based fuels for use in aircraft. The program will include a strong effort aimed at improving terminal area operations and safety through the development of technology to improve avionics, control systems, operating

procedures, crashworthiness, and the fire resistance of aircraft interior materials. An additional focused technology effort will develop technology for advance long-haul and short-haul air transportation system concepts for the future. The short-haul program addresses short take-off and landing (STOL), vertical take-off and landing (VTOL) and rotorcraft systems; while the long-haul program addresses conventional take-off and landing (CTOL) and subsonic systems with a modest effort aimed at developing supersonic and hypersonic technology to provide options for aircraft of the future.

The aeronautics program supports the military by providing an advanced technology base which is applicable to military aircraft as well as civil aircraft, and by providing technical problem solving support for current military aircraft development.

The construction of facilities request for FY 1976 includes funding for an addition for composite model and metal finishing shops at the Langley Research Center and modifications of the 11- x 11- feet transonic wind tunnel at the Ames Research Center.

The research and program management funding provides for the civil service salaries, travel, electric power for wind tunnel operations, and other general installation costs necessary to support the aeronautics program.

RESEARCH AND DEVELOPMENT

ESTIMATED FY 1976 OBLIGATIONS FOR
EQUIPMENT TO BE PLACED AT NASA INSTALLATIONS

Program Budget Line Item	(Thousands of Dollars) 1976
Manned Space Flight	$ 99,280
Space Shuttle	(82,157)
Development, Test and Mission Operations	(15,139)
Mission Systems and Integration	(1,634)
Space Life Sciences	(350)
Space Science	7,456
Lunar and Planetary	(3,809)
Physics and Astronomy	(2,530)
Launch Vehicle Procurement	(1,117)
Space Applications	8,349
Aeronautics and Space Technology	39,970
Aeronautical Research and Technology	(32,991)
Space and Nuclear Research and Technology	(6,979)
Tracking and Data Acquisition	10,522
GRAND TOTAL	$165,577

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
SUMMARY OF MAJOR EQUIPMENT ACQUISITION OBLIGATIONS INCLUDED IN FY 1976 BUDGET

PROGRAM BUDGET LINE ITEM	RECEIVING INSTALLATION, BUILDING LOCATION, AND EAD CONTROL NUMBER	EQUIPMENT DESCRIPTION	PROGRAMMATIC PURPOSE	FY 1976 OBLIGATIONS ($ in Thous.)	RELATED FACILITY PROJECT
Space Shuttle	Johnson Space Center Bldg. 35, 72-76-01	Shuttle Procedures Simulator System (SPS). The SPS is being developed by modifying the Apollo Procedures Simulator by the addition of the Shuttle Type crew station with cockpit instrumentation.	To establish and evaluate the crew's man-machine interface, develop, and validate crew procedures, and provide part task training for related mission phases.	500	
Space Shuttle	Johnson Space Center Bldg. 5, 72-76-02	Orbiter Aeroflight Simulator (OAS). The OAS will be developed by utilizing equipment from the Apollo mission simulators and adding a motion base, Shuttle Orbiter Crew Station, visual display system and Instructor's console.	To support the horizontal flight test phase of the Shuttle Program by providing training for flight crews and ground controllers.	4,400	
Space Shuttle	Johnson Space Center Bldg. 5, 72-76-03	Shuttle Mission Simulator (SMS). The SMS will operate in conjunction with the mission control center and will consist of a computer complex, crew station, visual simulator equipment, the motion base and the Instructor's console.	To train flight crews and ground controllers in the operation of all spacecraft systems in the launch, orbital, deorbit, entry, terminal, and landing phases of the Shuttle Program.	6,200	

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
SUMMARY OF MAJOR EQUIPMENT ACQUISITION OBLIGATIONS INCLUDED IN FY 1976 BUDGET

PROGRAM BUDGET LINE ITEM	RECEIVING INSTALLATION, BUILDING LOCATION, AND EAD CONTROL NUMBER	EQUIPMENT DESCRIPTION	PROGRAMMATIC PURPOSE	FY 1976 OBLIGATIONS ($ in Thous.)	RELATED FACILITY PROJECT
Space Shuttle	Marshall Space Flight Center Bldg. 4610 62-76-01	Hydraulic loading and load control system for structural test facility.	Required to apply loads to structurally test Shuttle Solid Rocket Booster elements.	1,100	
Space Shuttle	Kennedy Space Center (various bldgs.) 76-76-01	The Launch Processing System and associated equipment.	Test, checkout and launch of spacecraft and launch vehicles stages requires the transmission of command, and information regarding the status and the performance of flight systems, subsystems and their associated ground support systems.	21,414	
Development, Test, and Mission Operations	Johnson Space Center Bldg. 16 72-76-06	Digital Computer System	To accomplish the guidance and control systems tasks in support of the Shuttle	655	
Development, Test, and Mission Operations	Marshall Space Flight Center Bldg. 4708 62-76-03	Computer System	Required for data systems development in support of Spacelab	573	

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
SUMMARY OF MAJOR EQUIPMENT ACQUISITION OBLIGATIONS INCLUDED IN FY 1976 BUDGET

PROGRAM BUDGET LINE ITEM	RECEIVING INSTALLATION, BUILDING LOCATION, AND EAD CONTROL NUMBER	EQUIPMENT DESCRIPTION	PROGRAMMATIC PURPOSE	FY 1976 OBLIGATIONS ($ in Thous.)	RELATED FACILITY PROJECT
Mission Systems and Integration	Marshall Space Flight Center (bldg. not identified) 62-76-06	Concept Verification Test Simulators Hardware	Spacelab Simulator/ Shuttle Interface Simulator structural components for integration into the CVT simulators.	1,400	
Aeronautical Research and Technology	Ames Research Center Bldg. 210 21-76-01	Digital Computer Systems for Simulators	Required for the replacement of 10 year old computer systems.	1,103	
Aeronautical Research and Technology	Ames Research Center Wind Tunnel Bldgs. 21-76-02	Pressure Transducer system includes a high performance pressure transducer and readout, necessary cables and data acquisition system interface.	Required to replace existing electro-mechanical manometer followers. The resulting improved reliability and decreased pressure settling time will significantly improve facility operational efficiency.	250	

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
SUMMARY OF MAJOR EQUIPMENT ACQUISITION OBLIGATIONS INCLUDED IN FY 1976 BUDGET

PROGRAM BUDGET LINE ITEM	RECEIVING INSTALLATION, BUILDING LOCATION, AND EAD CONTROL NUMBER	EQUIPMENT DESCRIPTION	PROGRAMMATIC PURPOSE	FY 1976 OBLIGATIONS ($ in Thous.)	RELATED FACILITY PROJECT
Aeronautical Research and Technology	Ames Research Center Wind Tunnel bldgs. 21-76-03	Electronic strain gage signal conditioning and raw data display equipment.	Required to replace existing obsolete equipment in seven wind tunnels.	275	
Aeronautical Research and Technology	Ames Research Center Bldg. N-227 21-76-04	Dedicated digital computer and control system.	The existing data input/output rate of computers serving the Unitary Wind Tunnels is not fast enough to handle all static and dynamic problems in real time.	250	
Aeronautical Research and Technology	Ames Research Center Bldg. N-227 21-76-05	Forced Oscillation Semispan Model Support System and Associated Instrumentation	Required to conduct investigations of unsteady aerodynamics at transonic speeds.	250	
Aeronautical Research and Technology	Ames Research Center Bldg. 221-J 21-76-06	Data Acquisition System consisting of a master computer, card reader, disk drivers with controllers, magnetic tape drives with controllers, incremental plotter, line printer, paper tape reader and punch and input/output interfaces.	Required to replace outdated computer in 40'x80' wind tunnel.	586	

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
SUMMARY OF MAJOR EQUIPMENT ACQUISITION OBLIGATIONS INCLUDED IN FY 1976 BUDGET

PROGRAM BUDGET LINE ITEM	RECEIVING INSTALLATION, BUILDING LOCATION, AND EAD CONTROL NUMBER	EQUIPMENT DESCRIPTION	PROGRAMMATIC PURPOSE	FY 1976 OBLIGATIONS ($ in Thous.)	RELATED FACILITY PROJECT
Aeronautical Research and Technology	Ames Research Center Bldg. N-210 21-76-07	Data Acquisition System consisting of telemetry and RADAR front end data acquisition equipment.	Required to conduct safe, efficient, and economical flight test. Provide back-up redundancy and process increased flight data requirements.	500	
Aeronautical Research and Technology	Ames Research Center Bldg. 233 21-76-08	Large-scale computer for Ames central computer facility.	Required in the development of large scale aerodynamics codes and for support of other research activities at Ames.	1,440	
Aeronautical Research and Technology	Ames Research Center Bldg. 233 21-76-09	A high speed printer/ plotter computer output microfilm system .	Required to produce plotted and printed output and microfilm records from computer output.	300	

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
SUMMARY OF MAJOR EQUIPMENT ACQUISITION OBLIGATIONS INCLUDED IN FY 1976 BUDGET

PROGRAM BUDGET LINE ITEM	RECEIVING INSTALLATION, BUILDING LOCATION, AND EAD CONTROL NUMBER	EQUIPMENT DESCRIPTION	PROGRAMMATIC PURPOSE	FY 1976 OBLIGATIONS ($ in Thous.)	RELATED FACILITY PROJECT
Aeronautical Research and Technology	Langley Research Center Bldg. 643 23-76-01	Heavy duty strut and turntable model support system.	Required to increase testing time. Load carrying capability will be increased to 10,000#.	350	
Aeronautical Research and Technology	Langley Research Center Bldg. 640 23-76-02	Model Support System	Will provide for five separate remotely controlled model motions.	450	
Space and Nuclear Research and Technology	Ames Research Center (unidentified bldg.) 21-76-10	Spacelab Airborne Simulator	Required to develop operational concepts for managing Spacelab payloads.	400	
Physics and Astronomy	Ames Research Center Bldg. N-248-1 21-76-12	Environment Control System for the C-141 Airborne Observatory	Required to protect the AIRO Telescope System on the C-141 Aircraft.	450	

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
SUMMARY OF MAJOR EQUIPMENT ACQUISITION OBLIGATIONS INCLUDED IN FY 1976 BUDGET

PROGRAM BUDGET LINE ITEM	RECEIVING INSTALLATION, BUILDING LOCATION, AND EAD CONTROL NUMBER	EQUIPMENT DESCRIPTION	PROGRAMMATIC PURPOSE	FY 1976 OBLIGATIONS ($ in Thous.)	RELATED FACILITY PROJECT
Tracking and Data Acquisition	GSFC, Space Operations Facility Bldg. 14 51-76-01	HEAO Control Center System. Provides control and mission operations consoles with CRT displays.	Required to conduct real-time operations and control of the HEAO spacecraft.	$ 500	
Tracking and Data Acquisition	GSFC, Spacecraft Operations Facility Bldg. 14 51-76-02	IUE Control Center System. Provides control and display consoles for spacecraft and experiment operations.	Required to conduct the real-time operations of the International Ultraviolet Explorer spacecraft	700	
Tracking and Data Acquisition	GSFC, Data Interpretation Lab. Bldg. 23 51-76-03	Digital Image Processing System. Provides a high precision digital processing capability to handle image data received from various NASA missions.	Required to augment present system to provide increased image accuracy and precision in support of missions such as NIMBUS-G, HCMM, SEASATS	2500	
Tracking and Data Acquisition	Jet Propulsion Lab Combined Electronics Bldg. 125 55-76-01	Tracking Cross-Correlator. Provides a correlation system for processing tracking data from two widely separated stations.	Outer planet spacecraft require increased precision in ground navigation. Very Long Baseline Interferometric (VLBI) techniques will be utilized by Deep Space Network stations to achieve the required accuracy.	455	

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
SUMMARY OF MAJOR EQUIPMENT ACQUISITION OBLIGATIONS INCLUDED IN FY 1976 BUDGET

PROGRAM BUDGET LINE ITEM	RECEIVING INSTALLATION, BUILDING LOCATION, AND EAD CONTROL NUMBER	EQUIPMENT DESCRIPTION	PROGRAMMATIC PURPOSE	FY 1976 OBLIGATIONS ($ in Thous.)	RELATED FACILITY PROJECT
Tracking and Data Acquisition	Jet Propulsion Lab Plant Engineering Bldg. 202 55-76-02	Deep Space Network Control Support Processor, with Peripherals. Provides a continuation of a lease initiated in FY75.	Temporary augmentation of existing on-line network control equipment to provide continuity of support to on-going Pioneer and Viking missions while conducting software development for future approved spacecraft.	$ 252	
Tracking and Data Acquisition	Flight Research Center Laboratory Bldg. 4800 24-76-01	Telemetry Ground Station System Augmentation. Provides small computer to increase telemetry data handling capacity in existing system.	Current program schedules require ground support for two major aeronautical programs on the same day. This equipment augmentation permits a more rapid change-over by making software rather than hardware changes.	300	
Tracking and Data Acquisition	GSFC, Central Flight Control and Range Operations Bldg. 3 51-76-04	Network Data Processor, including processing and disc stowage units. Provides more effective utilization of existing large-scale computers by pre-processing incoming data to relieve the high speed computer of editing functions.	Existing data volume is saturating the high speed computers, and will increase. More efficient utilization of the large computers directly in their principal function (data processing) will be possible with the addition of this front-end processor.	685	

U. S. GOVERNMENT PRINTING OFFICE : 1975 O - 566-539