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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

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TUESDAY, NOVEMBER 18, 1975

STATEMENT OF
R. W. GUTMANN, DIRECTOR, PROCUREMENT AND SYSTEMS
ACQUISITION DIVISION
BEFORE THE
SUBCOMMITTEE ON COMMERCE, HOUSING, AND TRANSPORTATION
AND THE
SUBCOMMITTEE ON FISCAL AFFAIRS
COMMITTEE ON DISTRICT OF COLUMBIA
HOUSE OF REPRESENTATIVES

HSE 00911
HSE 00912

ON
[THE METRO RAPID RAIL TRANSIT SYSTEM]

CHAIRMAN MAZZOLI, CHAIRMAN STUCKEY AND MEMBERS OF THE COMMITTEE:

WE ARE HERE TODAY TO COMMENT ON THE WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY'S METRO RAIL SYSTEM. WE WILL SUMMARIZE THE FINDINGS OF PREVIOUSLY ISSUED REPORTS, REMEDIAL ACTION BY THE TRANSIT AUTHORITY, AND COMMENT ON OUR CURRENT WORK.

PRIOR REPORTS

FIRST, I WOULD LIKE TO DISCUSS FOUR PRIOR GAO REPORTS ON THE RAIL SYSTEM.

IN MARCH 1974, WE ISSUED A REPORT TO THE CONGRESS ON NEEDED IMPROVEMENTS IN THE TRANSIT AUTHORITY'S SYSTEM OF REPORTING ON THE STATUS OF METRO'S COST AND CONSTRUCTION PROGRESS. WE FOUND THAT COST AND CONSTRUCTION STATUS REPORTS PREPARED BY THE TRANSIT AUTHORITY AND SUBMITTED TO ITS BOARD OF DIRECTORS DID NOT FULLY IDENTIFY DIFFERENCES BETWEEN METRO'S:

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--BASELINE AND CURRENT ESTIMATES OF COST, AND

--PLANNED AND ACTUAL CONSTRUCTION PROGRESS.

IN ORDER TO IMPROVE THE REPORTING SYSTEM, WE RECOMMENDED THAT THE TRANSIT AUTHORITY BE REQUIRED TO PERIODICALLY PROVIDE THIS DATA AND EXPLANATIONS FOR SIGNIFICANT VARIANCES.

AFTER OUR REPORT WAS ISSUED TO THE CONGRESS, THE TRANSIT AUTHORITY'S BOARD OF DIRECTORS ON MARCH 21, 1974, DIRECTED THE GENERAL MANAGER TO IMPLEMENT OUR RECOMMENDATION. SINCE THAT TIME THE TRANSIT AUTHORITY HAS ISSUED QUARTERLY REPORTS ON COST INCREASES BUT THESE DID NOT FULLY COMPLY WITH OUR RECOMMENDATIONS. AT THE REQUEST OF CONGRESSMAN THOMAS M. REES, WE HAVE DEVISED A REPORTING FORMAT WHICH WOULD IMPROVE THE TRANSIT AUTHORITY'S REPORTING SYSTEM. IT WOULD SHOW THE ORIGINAL CAPITAL COST ESTIMATE; THE LATEST CAPITAL COST ESTIMATE; A CURRENT ESTIMATE; UP-TO-DATE SCHEDULE REVISIONS; THE PERFORMANCE STATUS OF MAJOR EQUIPMENT SUCH AS CARS, AUTOMATIC TRAIN CONTROL, AND FARE COLLECTION SYSTEMS; AND AN EXPLANATION FOR CHANGES OR SLIPPAGES. WE SUGGEST THE REPORT BE SUBMITTED TO CONGRESSIONAL COMMITTEES ON A SEMI-ANNUAL BASIS.

THE FORMAT WAS INCLUDED IN A LETTER TO CONGRESSMAN REES DATED NOVEMBER 4, 1975. WE BELIEVE THE PROPOSED REPORT WILL PROVIDE IMPROVED VISIBILITY OF THE STATUS OF THE METRO PROGRAM TO CONGRESS AND OTHERS. IT SHOULD ALERT DECISIONMAKERS OF THE POSSIBILITY OF INCREASED COSTS, SCHEDULE DELAYS, AND PERFORMANCE PROBLEMS ON A MORE CURRENT BASIS. TRANSIT AUTHORITY OFFICIALS AGREED DATA IN THIS FORM COULD BE PROVIDED FROM AVAILABLE INFORMATION AND FUTURE PROGRESS REPORTS WILL FOLLOW THIS FORMAT. THE TRANSIT AUTHORITY PLANS TO ISSUE THE FIRST REPORT IN JANUARY 1976.

THE OTHER GAO REPORTS ISSUED ON THE METRO SYSTEM RELATE TO THE ADEQUACY OF THE NOVEMBER 1974 CAPITAL COST ESTIMATE. AT THE REQUEST OF SENATOR HARRY F. BYRD, JR., WE EVALUATED THE \$4.5 BILLION CAPITAL COST ESTIMATE PREPARED BY THE TRANSIT AUTHORITY IN NOVEMBER 1974.

WE CONCLUDED IN A REPORT TO SENATOR BYRD ON MAY 8, 1975, THAT THE TRANSIT AUTHORITY'S ESTIMATE WAS HIGHLY OPTIMISTIC; AND THAT IN ALL LIKELIHOOD THE TOTAL SYSTEM WOULD NOT BE COMPLETED FOR AN ESTIMATED COST OF \$4.5 BILLION. IT IS NOT POSSIBLE TO PROJECT A RELIABLE FINAL COST FOR A SYSTEM OF THIS NATURE BECAUSE OF THE UNKNOWN PROBLEMS THAT MAY BE ENCOUNTERED.

IN THE REPORT TO SENATOR BYRD WE IDENTIFIED SEVERAL AREAS OF UNCERTAINTY WHICH COULD AFFECT SYSTEM COSTS. THE UNCERTAINTIES INCLUDED ESCALATION, ROUTE REALIGNMENTS, CHANGES IN TYPE OF CONSTRUCTION, SCHEDULE CHANGES, DESIGN CHANGES, CONTRACT OVERRUNS, AND OTHER UNANTICIPATED CONSTRUCTION PROBLEMS.

IN TESTIMONY BEFORE THESE SUBCOMMITTEES ON NOVEMBER 5, 1975, THE TRANSIT AUTHORITY'S GENERAL MANAGER STATED THAT A CONTINGENCY AMOUNTING TO 15 PERCENT OF THE UNEXPENDED PROGRAM, OR \$467 MILLION, WILL BE ESTABLISHED. ACCORDING TO THE GENERAL MANAGER, THE CONTINGENCY WILL PROVIDE COST COVERAGE FOR UNDEFINED AND UNKNOWN PROBLEMS. WE AGREE WITH THE TRANSIT AUTHORITY'S NEED FOR A CONTINGENCY BUT WE HAVE NOT EVALUATED THE ADEQUACY OF THE AMOUNT PROPOSED.

FOLLOWING THE REVIEW FOR SENATOR BYRD, SUBCOMMITTEE CHAIRMEN W. S. STUCKEY AND ROMANO L. MAZZOLI ASKED US TO REVIEW THE TRANSIT AUTHORITY'S COST AND FUNDING ESTIMATES FOR THE

FISCAL YEAR 1976 CONSTRUCTION PROGRAM. THE 1976 CONSTRUCTION COST ESTIMATE IS INCLUDED IN THE \$4.5 BILLION ESTIMATE. WE CONCLUDED THAT THE COST ESTIMATE FOR PROJECTS PLANNED IN FISCAL YEAR 1976 WAS UNDERSTATED BY \$312.9 MILLION, AND THE ESTIMATE OF REVENUES EXPECTED TO FINANCE THE CONSTRUCTION PROGRAM WAS OVERSTATED BY \$218.4 MILLION. THIS RESULTED IN A TOTAL SHORT-FALL OF \$531.3 MILLION.

AS A SHORT TERM SOLUTION TO ITS FUNDING PROBLEM, THE URBAN MASS TRANSPORTATION ADMINISTRATION APPROVED ON OCTOBER 3, 1975, THE USE OF \$286.6 MILLION OF INTERSTATE HIGHWAY FUNDS TRANSFERRED FROM DISTRICT OF COLUMBIA HIGHWAY PROJECTS. THIS AMOUNT WILL BE MATCHED WITH \$71.6 MILLION OF TRANSIT AUTHORITY INVESTMENT EARNINGS. ADDITIONAL TRANSFERS OF HIGHWAY FUNDS FROM DISTRICT OF COLUMBIA PROJECTS ARE EXPECTED, BUT THE FINAL AMOUNT HAS NOT BEEN DETERMINED.

CURRENT REVIEWS

NOW I WOULD LIKE TO DISCUSS OUR CURRENT WORK AT THE TRANSIT AUTHORITY. AT THE REQUEST OF CONGRESSMAN REES WE HAVE STARTED WORK ON SEVERAL TOPICS RELATING TO THE RAIL SYSTEM. THESE TOPICS INCLUDE:

- ANALYZING THE QUALITY OF THE TRANSIT AUTHORITY'S INVESTMENT PROGRAM AND THE ACCURACY OF ITS PUBLICLY REPORTED DATA;
- EVALUATING THE EFFECTIVENESS OF THE TRANSIT AUTHORITY'S INTERNAL COST CONTROL PROGRAM;
- EVALUATING EQUIPMENT TESTING AND PERFORMANCE AS THEY EFFECT THE OVERALL COST, EFFICIENCY AND SAFETY OF THE SYSTEM;

--ANALYZING SAFETY PROGRAMS ON CONSTRUCTION SITES AND
EQUIPMENT SAFETY; AND,

--DETERMINING THE COST IMPACT OF LABOR STRIKES.

AT THIS TIME, WE ARE ABLE TO REPORT ON THE TRANSIT AUTHORITY'S INVESTMENT PROGRAM, COST CONTROL EFFORTS, AND EQUIPMENT TESTING. WE ANTICIPATE COMPLETING THE REMAINING TASKS BY MARCH 1976.

WE ARE ALSO PERFORMING AN OVERALL STUDY COVERING THE COST, SCHEDULE AND PERFORMANCE STATUS OF THE METRO SYSTEM WHICH WE WILL DISCUSS.

INVESTMENT PROGRAM

THE METRO CONSTRUCTION PROGRAM IS FINANCED, IN PART, THROUGH CAPITAL CONTRIBUTIONS FROM PARTICIPATING LOCAL JURISDICTIONS AND PROCEEDS FROM FEDERALLY GUARANTEED TRANSIT AUTHORITY BONDS. UNTIL EXPENDED, THE TRANSIT AUTHORITY INVESTS THESE FUNDS AS REQUIRED BY THE TRANSIT BOND RESOLUTION ADOPTED BY THE BOARD OF DIRECTORS ON AUGUST 3, 1972. THE INVESTMENTS ARE RESTRICTED TO BONDS OR OTHER OBLIGATIONS ISSUED OR GUARANTEED BY THE UNITED STATES, MARYLAND, VIRGINIA, OR THEIR POLITICAL SUBDIVISION OR AGENCIES. AS OF JUNE 30, 1975, THE TRANSIT AUTHORITY HAD \$806.5 MILLION INVESTED, PRIMARILY IN SHORT TERM SECURITIES.

SINCE THE INCEPTION OF THE INVESTMENT PROGRAM, THROUGH JUNE 30, 1975, THE TRANSIT AUTHORITY HAS EARNED \$160.6 MILLION. OF THIS AMOUNT \$100 MILLION HAS BEEN APPLIED TO THE CONSTRUCTION PROGRAM AND \$5.4 MILLION HAS BEEN USED TO PAY EXECUTIVE MANAGEMENT COSTS. I SHOULD EXPLAIN THAT INVESTMENT EARNINGS ARE USED TO PAY THE EXECUTIVE MANAGEMENT COSTS BECAUSE FEDERAL FUNDS ARE RESTRICTED

TO THE PAYMENT OF COSTS DIRECTLY RELATED TO THE CONSTRUCTION PROGRAM.

THE OBJECTIVES OF THE TRANSIT AUTHORITY'S INVESTMENT PROGRAM ARE THREEFOLD:

- MEET LIQUIDITY NEEDS OF THE CONSTRUCTION PROGRAM;
- MINIMIZE RISK; AND,
- APPROXIMATE THE RETURN ON UNITED STATES TREASURY AND AGENCY SECURITIES.

THESE OBJECTIVES AND THE RESTRICTIONS CITED ABOVE HAVE RESULTED IN A FAIRLY CONSERVATIVE INVESTMENT PROGRAM. INVESTMENTS ARE COMPOSED PRIMARILY OF UNITED STATES TREASURY SECURITIES, CERTIFICATES OF DEPOSIT, AND SECURITIES OF FEDERAL AGENCIES AND GOVERNMENT GUARANTEED ENTERPRISES. ACCORDING TO TRANSIT AUTHORITY RECORDS, THE RATE OF RETURN ON INVESTMENT ACCOUNTS DURING FISCAL YEAR 1975 RANGED BETWEEN ABOUT 6.5 PERCENT AND 9 PERCENT. THESE RATES HAVE GENERALLY FOLLOWED PREVAILING MARKET YIELDS OF UNITED STATES GOVERNMENT SECURITIES.

REPORTING THE RESULTS OF ITS INVESTMENTS

WE BELIEVE THE TRANSIT AUTHORITY COULD PROVIDE MORE VISIBILITY TO THE BOARD OF DIRECTORS ON THE RESULTS OF ITS INVESTMENTS. THE STATUS OF THE INVESTMENT PROGRAM IS CURRENTLY REPORTED ON A MONTHLY BASIS TO THE BOARD OF DIRECTORS. THE REPORTS PRESENT THE VALUE OF SECURITY HOLDINGS AT COST FOR PREVIOUS AND CURRENT MONTHS, YIELD RATES, AND CASH RECEIVED RATHER THAN EARNED REVENUES. WE BELIEVE THE REPORTS WOULD BE MORE INFORMATIVE IF THEY SHOWED SEPARATELY, ACTUAL INTEREST EARNINGS AND GAINS AND LOSSES ON THE SALE OF INVESTMENTS FOR THE MONTH RATHER THAN JUST THE CASH RECEIVED DURING THE MONTH. MANY SECURITIES ARE VERY

OFTEN SOLD BEFORE THEY MATURE. SINCE MARKET VALUE ASSISTS IN JUDGING THE FINANCIAL POSITION OF THE TRANSIT AUTHORITY, WE SUGGEST THAT MONTHLY REPORTS INCLUDE MARKET VALUE OF SECURITIES IN ADDITION TO COST.

COST CONTROL EFFORTS

IN JANUARY 1975, THE TRANSIT AUTHORITY'S GENERAL MANAGER ESTABLISHED A SYSTEMS ANALYSIS AND VALUE ENGINEERING (SAVE) PANEL TO ACT AS THE FOCAL POINT FOR THE ASSESSMENT OF COST CONTROL EFFORTS AND TO REVIEW ALL PLANS, PROPOSALS, AND PRACTICES IMPACTING ON CONSTRUCTION AND OPERATING COSTS. SHORTLY AFTERWARD, THE BOARD OF DIRECTORS ESTABLISHED A COST REVIEW COMMITTEE TO RECOMMEND WAYS TO MINIMIZE COST OVERRUNS, PROVIDE DIRECTION TO THE STAFF'S "SAVE" PANEL, AND FOR OTHER PURPOSES.

IN ITS EFFORTS TO IDENTIFY POSSIBLE COST REDUCTIONS, THE TRANSIT AUTHORITY SOLICITED PROPOSALS FROM SELECTED DESIGN AND CONSTRUCTION CONTRACTORS AND CONSULTING ENGINEERS. AS A RESULT OF THIS EFFORT THE BOARD'S COST REVIEW COMMITTEE, IN CONJUNCTION WITH THE "SAVE" PANEL, HAS COMPILED A LIST OF 132 COST REDUCTION PROPOSALS WHICH ARE EXPECTED TO BE PRESENTED TO THE BOARD OF DIRECTORS FOR ACTION IN THE NEAR FUTURE. THE COMMITTEE PLANS TO RECOMMEND TO THE BOARD THAT 67 PROPOSALS BE ACCEPTED, 31 BE REJECTED, AND THAT 34 BE STUDIED FURTHER.

THE TRANSIT AUTHORITY STAFF ESTIMATES THAT 18 OF 67 ACCEPTABLE PROPOSALS COULD SAVE AT LEAST \$34.9 MILLION. SAVINGS RELATED TO THE OTHER PROPOSALS HAVE NOT YET BEEN IDENTIFIED. ANOTHER \$37.7 MILLION IN SAVINGS IS RELATED TO 11 OF THE REMAINING 65 PROPOSALS. WE HAVE NOT EVALUATED ANY TRADE-OFF ANALYSIS BE-

TWEEN PROCUREMENT COSTS AND OPERATION AND MAINTENANCE COSTS MADE BY METRO.

OVERALL STATUS OF THE PROJECT

COST AND FUNDING

IN TESTIMONY BEFORE THESE SUBCOMMITTEES ON NOVEMBER 5, 1975, THE TRANSIT AUTHORITY'S GENERAL MANAGER REPORTED THAT METRO'S TOTAL SYSTEM COST IS ESTIMATED AT \$4,650 MILLION. THIS AMOUNT REFLECTS ESTIMATED COST REDUCTIONS TOTALING \$34.9 MILLION.

WE HAVE IDENTIFIED AN ADDITIONAL INCREASE OF \$150.2 MILLION FOR A TOTAL SYSTEM COST OF \$4,801 MILLION. THE INCREASES ARE PRIMARILY RELATED TO UPDATED DESIGN ESTIMATES, START-UP COSTS, FUNDING DELAYS, AND ACTUAL AND FORECAST INCREASES IN THE COST OF WORK UNDER CONTRACT. WE DID NOT CONSIDER COST REDUCTIONS BECAUSE THEY HAVE NOT BEEN APPROVED BY THE TRANSIT AUTHORITY'S BOARD OF DIRECTORS.

FUNDING THE COMPLETE 98-MILE SYSTEM IS THE MOST URGENT PROBLEM FACING THE TRANSIT AUTHORITY. CURRENT FINANCIAL PLANS ONLY PROVIDE FUNDING OF \$2.980 BILLION, OR A SHORTFALL OF \$1.8 BILLION ON THE BASIS OF CURRENT ESTIMATES. PRIOR EXPERIENCE WITH THE UNCERTAINTIES IN CONSTRUCTION WORK OF THIS TYPE SUGGEST THAT THESE ESTIMATES MAY NOT BE VERY RELIABLE. AS MENTIONED EARLIER, INTERSTATE HIGHWAY FUNDS AND THE TRANSIT AUTHORITY'S INVESTMENT EARNINGS ARE BEING USED TO FUND A PORTION OF THIS SHORTFALL.

ANY SOLUTION TO THE FUNDING PROBLEM MUST CONSIDER NOT ONLY THE SHORTFALL IN CONSTRUCTION FUNDS BUT ALSO THE QUESTIONS OF PAYING OFF THE TRANSIT AUTHORITY'S REVENUE BONDS AND FUNDING THE ANTICIPATED OPERATING DEFICITS.

THE TRANSIT AUTHORITY ORIGINALLY PLANNED TO PAY OFF ITS

BONDS WITH SYSTEM REVENUES. THE BONDS ARE BACKED BY A FEDERAL GUARANTEE, BUT THE LOCAL JURISDICTIONS HAVE PLEDGED "GOOD FAITH" EFFORTS TO PAY ANY BOND COSTS NOT COVERED BY SYSTEM REVENUES. SINCE THE SYSTEM IS NOW PROJECTED TO OPERATE AT A LOSS, LOCAL JURISDICTIONS WILL BE EXPECTED TO PAY MOST OF THE BOND COSTS UNLESS OTHER SOURCES ARE FOUND. THIS MAY PRESENT A SERIOUS PROBLEM TO MANY OF THE JURISDICTIONS.

THE RAIL SYSTEM'S OPERATING DEFICITS ARE ESTIMATED TO TOTAL APPROXIMATELY \$109.5 MILLION FROM FISCAL YEAR 1977 TO FISCAL YEAR 1980. LOCAL JURISDICTIONS ARE EXPECTED TO SUBSIDIZE THE RAIL OPERATIONS, UNLESS OTHER SOURCES ARE FOUND.

SCHEDULE

PHASE I OF THE METRO RAIL SYSTEM IS CURRENTLY SCHEDULED TO OPEN FOR REVENUE SERVICE IN MID FEBRUARY 1976. THIS FIRST SEGMENT, ORIGINALLY SCHEDULED TO OPEN IN DECEMBER 1972, WILL RUN 4.6 MILES IN DOWNTOWN WASHINGTON FROM THE RHODE ISLAND AVENUE STATION TO THE FARRAGUT NORTH STATION. ACCORDING TO TRANSIT AUTHORITY STAFF, THE SCHEDULED OPENING IS DEPENDENT UPON THE DELIVERY OF ACCEPTABLE RAIL CARS BY ROHR INDUSTRIES INCORPORATED. THE TRANSIT AUTHORITY HAS REFUSED TO ACCEPT THE CARS BECAUSE THEY DO NOT MEET A NUMBER OF CONTRACT SPECIFICATIONS.

ACCORDING TO THE CONTRACT SCHEDULE, 236 CARS SHOULD HAVE BEEN DELIVERED BY NOVEMBER 1, 1975; HOWEVER, ONLY 24 HAVE BEEN DELIVERED. ON AUGUST 30, 1975, ROHR SET-UP A NEW SCHEDULE WITH THE TRANSIT AUTHORITY FOR THE DELIVERY OF 36 TO 40 CARS FOR THE FIRST PHASE OF REVENUE OPERATIONS. THE CARS WERE TO BE DELIVERED BY THE END OF NOVEMBER 1975. PRESENTLY, ROHR

IS 10 CARS BEHIND SCHEDULE. IT EXPECTS TO COMPLETE DELIVERY OF THE FIRST 40 REVENUE CARS BY THE MIDDLE OF DECEMBER 1975.

GAO REPRESENTATIVES VISITED THE ROHR PLANT IN WINDER, GEORGIA, ON NOVEMBER 7, 1975, TO ASCERTAIN THE DELIVERY STATUS OF THE CARS. THE ROHR PROGRAM MANAGER CONCURRED THAT A NUMBER OF PROBLEMS SUCH AS AIR CONDITIONING, BRAKES, AND NOISE REQUIRED RE-ENGINEERING TO MEET SPECIFICATIONS AND STATED THAT MOST OF THE TECHNICAL PROBLEMS HAVE BEEN SOLVED AND COME WITHIN REASONABLE LIMITS OF MEETING SPECIFICATIONS.

PORTIONS OF ROHR'S ASSEMBLY LINE WERE NOT OPERATING AT THE TIME OF OUR VISIT BECAUSE PERSONNEL HAD BEEN SHIFTED TO LATER ASSEMBLY STAGES IN ORDER TO EXPEDITE THE COMPLETION OF CARS TO MEET PHASE I DELIVERY REQUIREMENTS. THE ASSEMBLY LINE IS EXPECTED TO BE IN FULL OPERATION SHORTLY WHEN COMPLETION OF ONE CAR EACH DAY IS EXPECTED.

EXTENDED CONSTRUCTION STRIKES HAVE CAUSED THE SCHEDULED OPENING DATE FOR PHASE II, WHICH RUNS FROM NATIONAL AIRPORT TO THE STADIUM-ARMORY STATION TO SLIP FROM MAY 1976 TO JANUARY 1977.

PHASE IIA, RUNNING FROM THE SILVER SPRING STATION TO THE BROOKLAND STATION, HAS BEEN DELAYED ONE MONTH TO AUGUST 1977. NO CHANGES HAVE BEEN MADE IN THE OPENING DATES OF THE OTHER PHASES. HOWEVER, TRANSIT AUTHORITY STAFF ADVISED US THAT THE ENTIRE SYSTEM WOULD NOT BE COMPLETED UNTIL 1982. THE CURRENT SCHEDULE, APPROVED IN JULY 1974, SHOWS THE SYSTEM BEING COMPLETED IN JULY 1981. A REVISED SCHEDULE WILL BE PREPARED AFTER A LONG RANGE FUNDING PLAN IS ADOPTED.

PERFORMANCE

AS ORIGINALLY ENVISIONED, THE METRO SYSTEM WOULD OPERATE 7 DAYS PER WEEK AND 20 HOURS PER DAY FROM 5:00 A.M. TO 1:00 A.M. TRAIN SCHEDULES DURING PEAK PERIODS WOULD PROVIDE TRAIN FREQUENCIES AT TWO TO FOUR MINUTE INTERVALS.

IN SEPTEMBER 1975, THE TRANSIT AUTHORITY STAFF RECOMMENDED TO ITS BOARD OF DIRECTORS THAT SERVICE FOR PHASE I AND II BE PROVIDED 5 DAYS A WEEK AND 14 HOURS PER DAY FROM 6:00 A.M. TO 8:00 P.M. TRAINS WOULD OPERATE WITH 5 MINUTE INTERVALS DURING PEAK HOURS AND 10 MINUTE INTERVALS DURING NON-PEAK HOURS. AFTER JANUARY 1, 1978, THE SYSTEM WOULD OPERATE 7 DAYS PER WEEK AND 20 HOURS PER DAY. THE LOWER LEVEL OF SERVICE WAS RECOMMENDED TO REDUCE OPERATING LOSSES.

IN ADDITION TO THE REDUCTION IN SERVICE, PHASE I WILL NOT INITIALLY PROVIDE ALL OF THE FEATURES ORIGINALLY ENVISIONED. THE SYSTEM WILL NOT HAVE:

- AN AUTOMATIC FARE COLLECTION SYSTEM;
- ELEVATORS FOR THE HANDICAPPED AT FARRAGUT NORTH, GALLERY PLACE, AND UNION STATION;
- AIR CONDITIONING AT FARRAGUT NORTH, METRO CENTER, AND UNION STATION; AND
- COMPLETE AUTOMATIC TRAIN CONTROL SYSTEM.

EQUIPMENT AND SYSTEM TESTING

THE TRANSIT AUTHORITY HAD PLANNED TO COMPLETE THREE DIFFERENT SERIES OF TESTS--CONTRACT ACCEPTANCE TESTS, INTEGRATED

SYSTEM TESTS, AND PRE-REVENUE OPERATIONAL TESTS--BEFORE STARTING PASSENGER OPERATIONS IN FEBRUARY 1976. BECAUSE OF CONSTRUCTION DELAYS AND EQUIPMENT PRODUCTION PROBLEMS MANY OF THESE TESTS CANNOT BE COMPLETED BEFORE THE START OF PASSENGER OPERATIONS. IN MY FOLLOWING COMMENTS, I WILL DISCUSS THE PURPOSE OF THESE TESTS AND SOME OF THE PROBLEMS BEING ENCOUNTERED.

CONTRACT ACCEPTANCE TESTS

THESE TESTS ARE PERFORMED BY THE TRANSIT AUTHORITY TO ENSURE THAT THE CONTRACTORS ARE PROVIDING EQUIPMENT IN CONFORMANCE WITH CONTRACT SPECIFICATIONS AND DRAWINGS. AS ALREADY POINTED OUT, CERTAIN FEATURES WILL NOT BE AVAILABLE FOR PHASE I OPERATIONS; OF MORE IMPORTANCE, HOWEVER, ARE THOSE EQUIPMENT ITEMS NECESSARY FOR INITIAL REVENUE OPERATIONS THAT HAVE NOT BEEN ACCEPTED BY THE TRANSIT AUTHORITY. THESE INCLUDE THE TRANSIT CARS, PORTIONS OF THE TRAIN CONTROL, AND COMMUNICATIONS SYSTEMS.

ACCORDING TO THE TRANSIT AUTHORITY, THE DELIVERY OF ACCEPTABLE CARS CURRENTLY POSES THE GREATEST PROBLEM IN PREPARING FOR REVENUE SERVICE. IN ORDER NOT TO DELAY THE TESTING PROGRAM THEY ALLOWED THE CONTRACTOR, ROHR INDUSTRIES, TO SHIP A LIMITED NUMBER OF CARS WITH CERTAIN KNOWN DEFICIENCIES. THIS ACTION WAS TAKEN WITH THE UNDERSTANDING THAT ROHR WOULD RETROFIT THESE CARS TO INCORPORATE ALL REQUIRED ENGINEERING CHANGES AND CORRECT ALL OUTSTANDING QUALITY CONTROL DISCREPANCIES.

AS A RESULT OF THE DELAY IN DELIVERY OF ACCEPTABLE TRANSIT CARS, AUTOMATIC TRAIN CONTROL TESTING HAS BEEN DELAYED. CERTAIN TRAIN CONTROL TESTS REQUIRING CARS HAVE BEEN POSTPONED UNTIL ACCEPTABLE CARS ARE AVAILABLE.

FURTHERMORE, SIMULATED RUSH HOUR TESTS DESIGNED TO PROVE THE PROPER AND SAFE OPERATION OF THE TRAIN CONTROL SYSTEM, HAVE BEEN DEFERRED TO LATER PHASES. THIS WAS DONE BECAUSE PHASE I DOES NOT PROVIDE SUFFICIENT TRACKAGE OR TYPE OF STATIONS TO PROVE THE SPECIFIED OPERATIONAL CAPABILITIES OF THE SYSTEM. THE TESTS ARE SCHEDULED FOR PHASE IIA (AUGUST 1977).

ACCEPTANCE TESTING OF THE COMMUNICATIONS SYSTEM REQUIRES ABOUT 6 MONTHS OF TESTING. THE EQUIPMENT IS CURRENTLY BEING INSTALLED, THEREFORE, THE TESTING CANNOT BE COMPLETED BEFORE REVENUE OPERATIONS BEGIN IN FEBRUARY 1976.

INTEGRATED SYSTEM TESTS

THESE TESTS ARE CONDUCTED TO VERIFY THAT SUBSYSTEMS DEPENDENT UPON EACH OTHER WILL BE COMPATIBLE. THEY CONSIST OF INTERFACE (COORDINATION BETWEEN TWO OR MORE SYSTEMS) AND SPECIAL TESTS --TESTS TO PROVE OVERALL SYSTEM DESIGN AND SAFETY--THAT WILL NOT BE PERFORMED UNDER EXISTING CONSTRUCTION AND EQUIPMENT CONTRACTS.

THE TRANSIT AUTHORITY'S GENERAL CONSTRUCTION CONSULTANT, BECHTEL ASSOCIATES PROFESSIONAL CORPORATION, SUBMITTED A TEST PLAN FOR PHASE I ON OCTOBER 2, 1975. IN ADDITION TO CERTAIN ACCEPTANCE TESTS, IT INCLUDED THOSE INTERFACE AND SYSTEM TESTS THAT HAD BEEN IDENTIFIED. ALTHOUGH THE TRANSIT AUTHORITY HAS GIVEN ITS APPROVAL FOR A MAJORITY OF TESTS OUTLINED IN THE PLAN,

A NUMBER OF TESTS INCLUDING SPECIAL TESTS HAD NOT BEEN APPROVED AS OF NOVEMBER 11, 1975.

PRE-REVENUE OPERATIONAL TESTING

THE PURPOSE OF THIS TESTING PERIOD IS TO OPERATE THE SYSTEM AS IF IN REVENUE OPERATIONS, AFTER EQUIPMENT HAS BEEN ACCEPTED AND INTEGRATED SYSTEMS TESTS COMPLETED. IT WILL PERMIT OPERATING PERSONNEL TO BECOME FAMILIAR WITH THE SYSTEM. AT THE SAME TIME EXTENSIVE SAFETY CHECKS WILL BE CONDUCTED TO ESTABLISH CONFIDENCE IN THE SYSTEM. ACCORDING TO TRANSIT AUTHORITY STAFF, THE PRE-REVENUE OPERATIONAL TESTING PERIOD WILL BE 2 WEEKS, ALTHOUGH A TESTING PERIOD LASTING UP TO 100 DAYS HAD BEEN CONSIDERED.

INITIAL PHASE I OPERATIONS WILL BE A TRIAL PERIOD FOR THE SYSTEM. TESTING AND DEBUGGING OF THE CARS AND EQUIPMENT UNDER SCHEDULED AND PASSENGER CARRYING CONDITIONS WILL BE PERFORMED. TRAINING OF THE VARIOUS WORK DISCIPLINES WILL CONTINUE.

I WOULD NOW LIKE TO SUMMARIZE THE MAJOR POINTS OF MY STATEMENT.

1. THE NEW REPORTING FORMAT WILL PROVIDE IMPROVED VISIBILITY OF THE STATUS OF THE METRO PROGRAM. IT SHOULD ALERT DECISIONMAKERS OF THE POSSIBILITY OF INCREASED COSTS, SCHEDULE DELAYS AND PERFORMANCE PROBLEMS.
2. ALTHOUGH WE HAVE IDENTIFIED ADDITIONAL COSTS, A FINAL COST CANNOT BE ESTIMATED BECAUSE OF NUMEROUS UNCERTAINTIES RELATED TO THE SYSTEM WHICH WE IDENTIFIED IN OUR REPORT TO SENATOR BYRD.

3. THE TRANSIT AUTHORITY IS PLANNING TO INCLUDE \$467 MILLION FOR CONTINGENCIES IN ITS CURRENT ESTIMATE OF TOTAL SYSTEM COST. WE AGREE WITH THE NEED FOR A CONTINGENCY BUT HAVE NOT EVALUATED THE AMOUNT PROPOSED.
4. THE TRANSIT AUTHORITY STAFF HAS RECOMMENDED PROPOSALS THAT WOULD SAVE ABOUT \$35 MILLION. THESE PROPOSALS WILL BE SUBMITTED TO THE BOARD OF DIRECTORS FOR ACTION IN THE NEAR FUTURE.
5. THE TRANSIT AUTHORITY COULD PROVIDE MORE VISIBILITY ON THE RESULTS OF ITS INVESTMENTS BY SHOWING ON ITS MONTHLY REPORTS
 - (1) ACTUAL INTEREST EARNINGS RATHER THAN CASH RECEIVED,
 - (2) GAINS AND LOSSES ON THE SALE OF INVESTMENTS, AND (3)MARKET VALUE IN ADDITION TO COST.
6. FUNDING THE COMPLETE 98-MILE SYSTEM IS THE MOST URGENT PROBLEM FACING THE TRANSIT AUTHORITY. CURRENT FINANCIAL PLANS ONLY PROVIDE FOR FUNDING A \$2.980 BILLION SYSTEM. ANY SOLUTION TO THE FUNDING PROBLEM MUST CONSIDER NOT ONLY THE SHORTFALL IN CONSTRUCTION FUNDS BUT ALSO THE QUESTION OF PAYING OFF THE TRANSIT AUTHORITY'S REVENUE BONDS AND FUNDING THE ANTICIPATED OPERATING DEFICITS.
7. INITIAL REVENUE OPERATIONS WILL PROVIDE LESS SERVICE THAN THAT ORIGINALLY PLANNED. ALSO, ALL THE FEATURES ORIGINALLY ENVISIONED WILL NOT BE AVAILABLE WHEN SERVICE BEGINS.

8. THE TRANSIT AUTHORITY HAD PLANNED TO COMPLETE THREE SERIES OF TESTS -- CONTRACT ACCEPTANCE TESTS, INTEGRATED SYSTEM TESTS, AND PRE-REVENUE OPERATIONAL TESTS -- BEFORE STARTING PASSENGER OPERATIONS IN FEBRUARY 1976. BECAUSE OF CONSTRUCTION DELAYS AND EQUIPMENT PRODUCTION PROBLEMS, MANY OF THESE TESTS HAD NOT BEEN PERFORMED AS OF OCTOBER 31, 1975, AND CANNOT BE COMPLETED BEFORE FEBRUARY 1976.

THIS CONCLUDES MY STATEMENT.