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GENERAL PLANNING CONSULTANT

TECHNICAL MEMORANDUM 88.3.4

IMPLEMENTATION OF CAPACITY RESTRAINED PROCEDURE USING UOILM PROGRAM AND MULTIPATH TECHNIQUE

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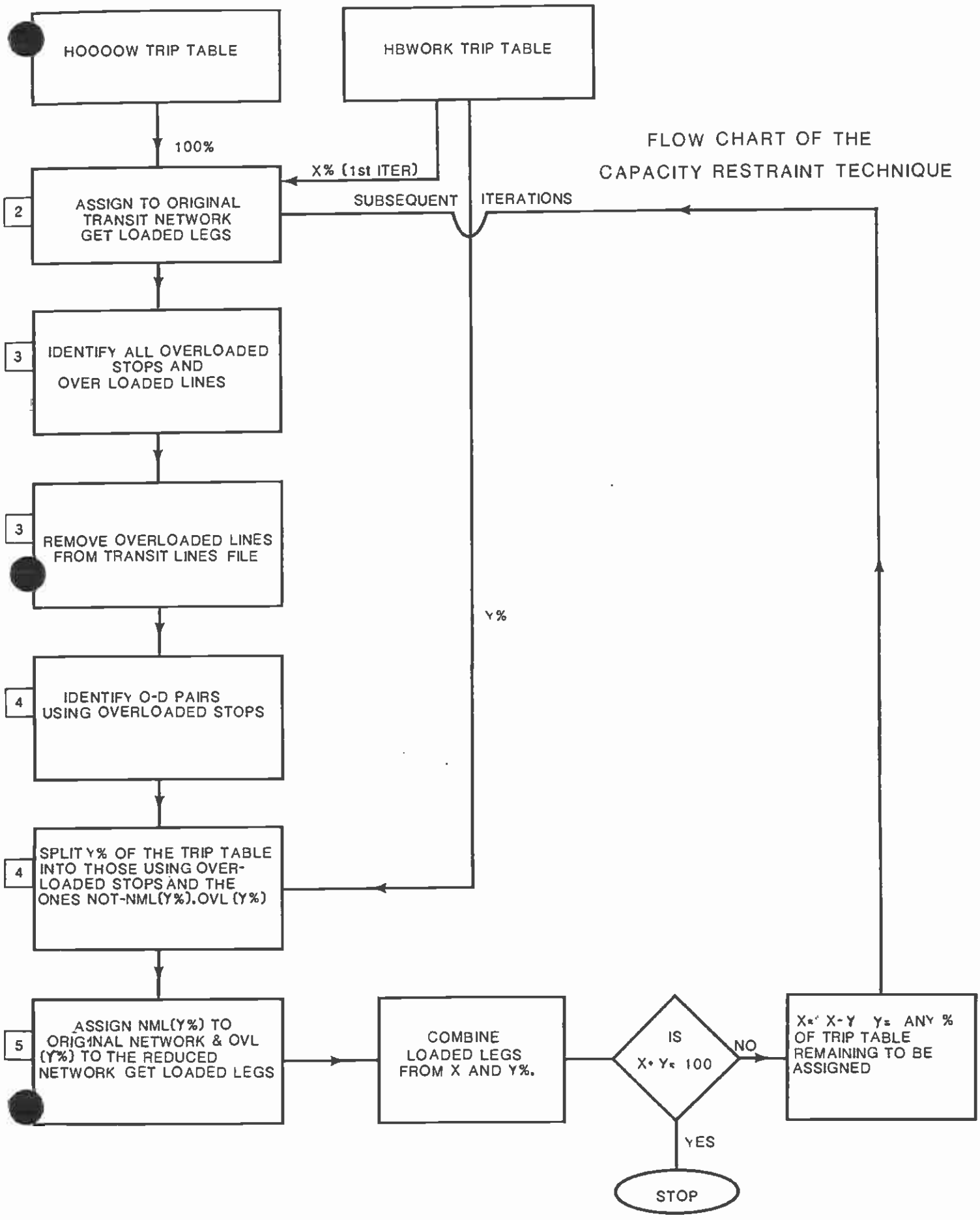
1. BACKGROUND

1.1 OBJECTIVE

The objective of this memorandum is to document the results from the implementation of a new multipath limited capacity restrained transit assignment procedure. This procedure was developed by Dr. Joseph Prashka as part of the Work Area 3.3 subtask. The conceptual framework of this procedure was described in Technical Memorandum 87.3.4 titled Capacity Restrained Transit Assignment. A program (UOILM) was also written for this procedure. The description of this program was described in Technical Memorandum 88.3.3 titled Overload Identification and Line Manipulation program. This memorandum describes in detail the various jobs involved and documents the results from using such a procedure.

1.2 THE ALGORITHM

The basic flowchart of the procedure is shown on the following page. It is an iterative process with portions of the travel demand assigned successively in each iteration. Initially, all the Home Based Nonwork and Non Home Based trips together with a percentage of Home Based Work trips are loaded onto the network. Then the overloaded lines as well as the trip interchanges encountering these overloaded lines are identified. These overloaded lines will be removed completely or changed into one directional lines depending on the overloading situation and a new reduced transit network is created. The remainder of the Home Based Work trips are then split into two parts, the first


FLOW CHART OF THE
CAPACITY RESTRAINT TECHNIQUE
HOOOOW TRIP TABLE
HBWORK TRIP TABLE
100%
X% (1st ITER)
SUBSEQUENT
ITERATIONS
2
ASSIGN TO ORIGINAL TRANSIT NETWORK GET LOADED LEGS
3
IDENTIFY ALL OVERLOADED STOPS AND OVER LOADED LINES
3
REMOVE OVERLOADED LINES FROM TRANSIT LINES FILE
Y%
4
IDENTIFY O-D PAIRS USING OVERLOADED STOPS
4
SPLIT Y% OF THE TRIP TABLE INTO THOSE USING OVER-LOADED STOPS AND THE ONES NOT-NML(Y%).OVL(Y%)
5
ASSIGN NML(Y%) TO ORIGINAL NETWORK & OVL (Y%) TO THE REDUCED NETWORK GET LOADED LEGS
COMBINE LOADED LEGS FROM X AND Y%.
IS X+Y= 100
NO
X= X-Y Y= ANY % OF TRIP TABLE REMAINING TO BE ASSIGNED
YES
STOP

part consisting of O-D pairs using these overloaded lines in the path and the other part consisting of O-D pairs not using the overloaded lines in the path. In the subsequent iteration a portion of the remaining Home Based Work trips are loaded in two different sequences of steps. In the first sequence, the O-D pairs encountering overloaded lines are loaded to the reduced network while in the second sequence, the O-D pairs not encountering overloaded lines are loaded onto the original network. After these additional trips are added onto the network a new set of overloaded lines and the trip interchanges encountering these overloaded lines are identified again. This process of two-sequence loading, identifying the overloaded lines and corresponding trip interchanges, and the creation of the reduced transit network is carried out until all the Home Based Work trips are fully loaded to the network. The specific steps in the algorithm are listed below:

1. Take X% of Home Based Work trips and 100% of Home Based Nonwork and Non Home Based trips. Prepare the input trip table.
2. Assign these trips to the original network.
3. Using the UOILM program, identify all overloaded lines and the corresponding overloaded stops. Create a reduced transit network in which all overloaded lines are either removed or changed into one directional lines.
4. Use the overloaded stops and a USTOS/UMATRIX procedure to split a portion of the remaining Home Based Work trips

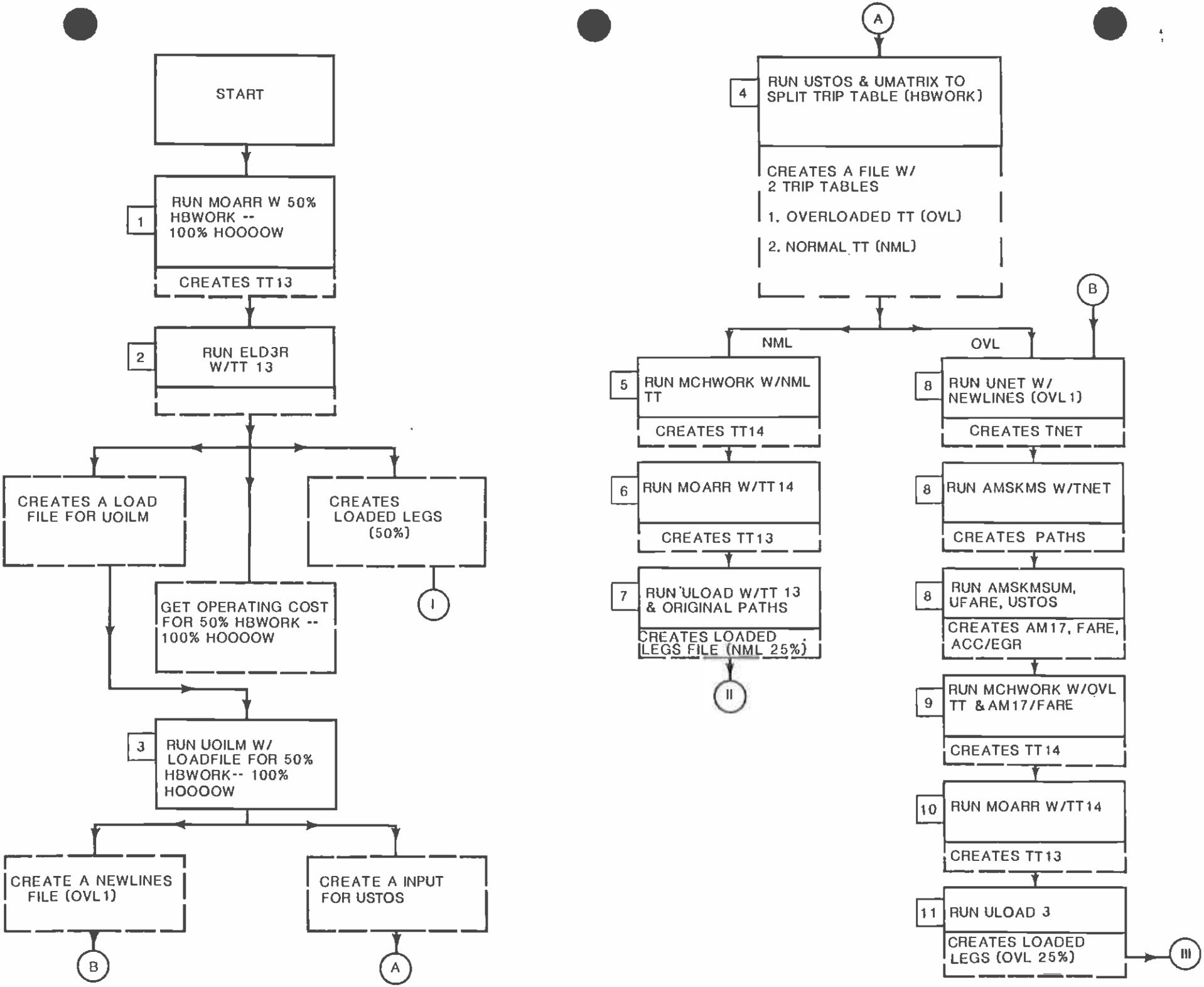
into O-D pairs encountering these overloaded stops (OVL) and the those not encountering overloaded stops (NML).

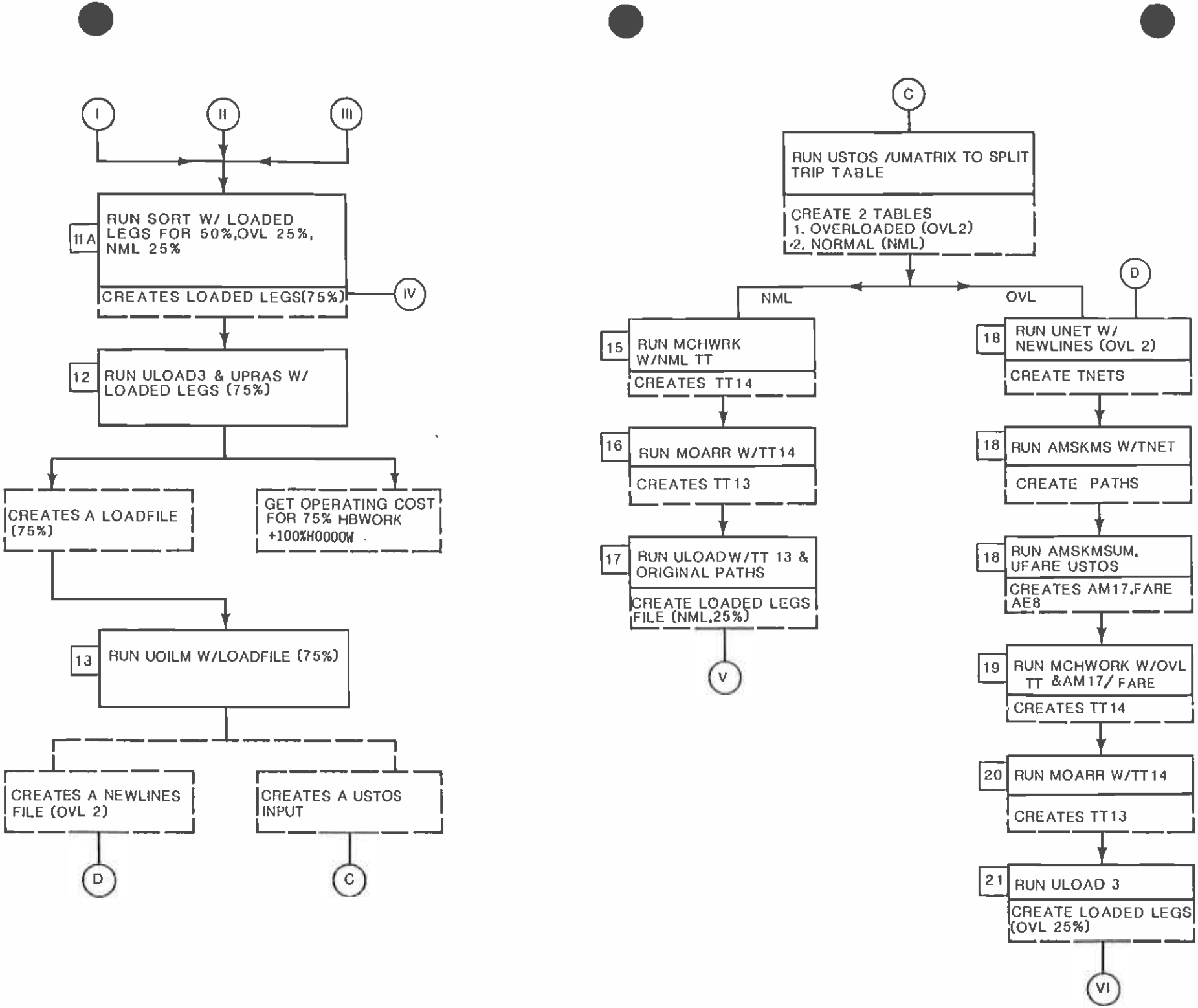
5. Assign the OVL trips to the reduced network and the NML trips to the original network.
6. Combine network loading results from Steps 2 and 5. If a further portion of the Home Based trip table remains to be assigned go back to Step 2.

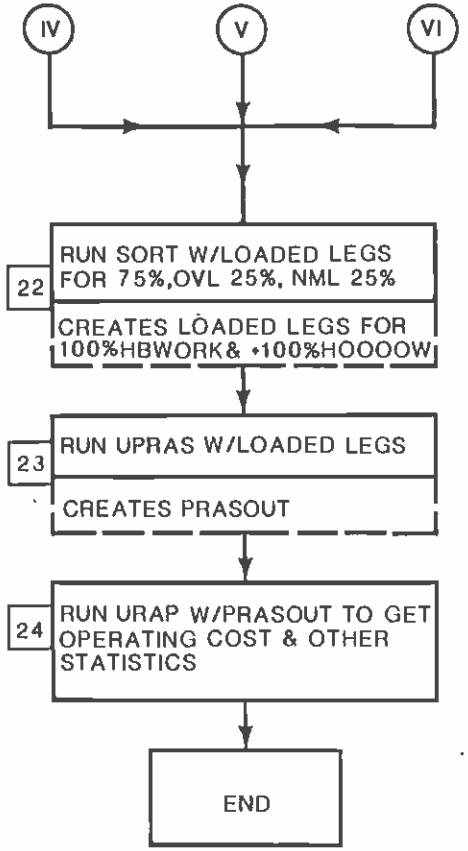
2. TESTING OF THE TECHNIQUE

The network chosen for study was COR30S14 which is the MOS-2B operable segment of the CORE candidate alignment 6. The portion of the Home Based trip table assigned in the first iteration was 50%, assuming that 50% of Home Based Work and the entire portion of Home Based Nonwork and Non Home based trips did not exceed the capacity on transit lines significantly. The remaining 50% of the Home Based Work trips were loaded in two successive iterations, each with 25%. The detailed job-by-job description for implementing this procedure at SCRTD is described below:

1. Run Mode-of-Arrival with 100% TT12 (output of mode choice non-work) and 50% TT14 (output of mode choice-work). This creates TT13 which is used as an input to the ELD3R program.
2. Run ELD3R with TT13 created in Job 1. This will create a loaded legs file for 50% HBWORK and 100% HOOOOW trips. Statistics regarding operating cost and other parameters such as peak vehicles, vehicle hours, vehicles miles and ridership are also produced in this step. A loadfile containing information on the load on each line is also produced from the ELD3R program.
3. Run UOILM with the loadfile created in the above step. UOILM creates a new reduced lines file and a list of all overloaded stops which will be used as an input to the following USTOS step.


START
1
RUN MOARR W 50% HBWORK -- 100% HOOOOW
CREATES TT13
2
RUN ELD3R W/TT 13
CREATES A LOAD FILE FOR UOILM
CREATES LOADED LEGS (50%)
I
GET OPERATING COST FOR 50% HBWORK -- 100% HOOOOW
3
RUN UOILM W/ LOADFILE FOR 50% HBWORK-- 100% HOOOOW
CREATE A NEWLINES FILE (OVL1)
CREATE A INPUT FOR USTOS
B
A
A
4
RUN USTOS & UMATRIX TO SPLIT TRIP TABLE (HBWORK)
CREATES A FILE W/ 2 TRIP TABLES
1. OVERLOADED TT (OVL)
2. NORMAL TT (NML)
B
NML
OVL
5
RUN MCHWORK W/NML TT
CREATES TT14
6
RUN MOARR W/TT14
CREATES TT13
7
RUN ULOAD W/TT 13 & ORIGINAL PATHS
CREATES LOADED LEGS FILE (NML 25%)
II
8
RUN UNET W/ NEWLINES (OVL1)
CREATES TNET
8
RUN AMSKMS W/TNET
CREATES PATHS
8
RUN AMSKMSUM, UFARE, USTOS
CREATES AM17, FARE, ACC/EGR
9
RUN MCHWORK W/OVL TT &AM17/FARE
CREATES TT14
10
RUN MOARR W/TT14
CREATES TT13
11
RUN ULOAD 3
CREATES LOADED LEGS (OVL 25%)
III


I
II
III
11A
RUN SORT W/ LOADED LEGS FOR 50%,OVL 25%, NML 25%
CREATES LOADED LEGS(75%)
IV
12
RUN ULOAD3 & UPRAS W/ LOADED LEGS (75%)
CREATES A LOADFILE (75%)
GET OPERATING COST FOR 75% HBWORK +100%H0000W
13
RUN UOILM W/LOADFILE (75%)
CREATES A NEWLINES FILE (OVL 2)
CREATES A USTOS INPUT
D
C
C
RUN USTOS /UMATRIX TO SPLIT TRIP TABLE
CREATE 2 TABLES
1. OVERLOADED (OVL2)
2. NORMAL (NML)
NML
OVL
D
15
RUN MCHWRK W/NML TT
CREATES TT14
16
RUN MOARR W/TT14
CREATES TT13
17
RUN ULOADW/TT 13 & ORIGINAL PATHS
CREATE LOADED LEGS FILE (NML,25%)
V
18
RUN UNET W/ NEWLINES (OVL 2)
CREATE TNETS
18
RUN AMSKMS W/TNET
CREATE PATHS
18
RUN AMSKMSUM, UFARE USTOS
CREATES AM17,FARE AE8
19
RUN MCHWORK W/OVL TT &AM17/ FARE
CREATES TT14
20
RUN MOARR W/TT14
CREATES TT13
21
RUN ULOAD 3
CREATE LOADED LEGS (OVL 25%)
VI


IV
V
VI
22
RUN SORT W/LOADED LEGS FOR 75%,OVL 25%, NML 25%
CREATES LOADED LEGS FOR 100%HBWORK& +100%HOOOOW
23
RUN UPRAS W/LOADED LEGS
CREATES PRASOUT
24
RUN URAP W/PRASOUT TO GET OPERATING COST & OTHER STATISTICS
END

4. Run USTOS on the original paths with the overloaded stops produced by UOILM. This USTOS run, in conjunction with the UMATRIX procedure splits the trip table into O-D pairs using overloaded stops (OVL) and O-D pairs not using these stops (NML).
5. Run mode choice work with the NML portion of the trip table to create TT14.
6. Run mode of arrival with TT14 from Job 5 and 0% of TT12 to create TT13.
7. Run ULOAD3 with TT13 from Job 6 to create a loaded legs file for the NML trips.
8. This step has seven jobs combined into a single submission. To begin, UNET is be run with the new reduced lines file to create a transit network. Then run the walk, park and ride and kiss and ride skims to create the corresponding paths. Then run UFARE, USTOS and AMSKMSUM to create FARE, ACCESS/EGRESS tables and AM17 tables. These files are input to the succeeding steps.
9. Run mode choice work with the OVL trips produced in Job 4, and the AM17 and fare tables from Job 8 to create TT14.
10. Run mode of arrival with 0% TT12 and TT14 from Job 9 to create TT13.
11. This step has two jobs combined into a single submission. First run ULOAD3 with TT13 from Job 10 on the new reduced

paths to create a loaded legs file for the OVL trips. Then run the SORT program (Job 11A) to combine loaded legs from Steps 2, 7 and 11. This will create a loaded legs file for 75% HBWORK and 100% HOOOOW trips assigned.

12. Using the combined loaded legs run ULOAD/UPRAS to create a loadfile for UOILM. Statistics in terms of estimates of operating cost for 75% HBWORK trips and 100% HOOOOW trips assigned are produced by URAP.
13. Run UOILM with the original network to create a new reduced lines file and a new set of overloaded stops.
14. Run USTOS with the original paths and the new set of overloaded stops to split the remaining 25% HBWORK trips into NML and OVL trips.
15. Run mode choice work with the NML trip table to create TT14.
16. Run mode of arrival with TT14 from above and 0% TT12 to create TT13.
17. Run ULOAD3 to create a loaded legs file for the NML trips.
18. This step is another set of seven jobs. First run UNET with the new lines file to create a transit network. Then run the path skims to create the path files. The next sequence of jobs are UFARE, USTOS and AMSKMSUM. These will create FARE, ACCESS/EGRESS tables and AM17 files which are used in the next two steps.
19. Run mode choice work to create TT14 for OVL trips.

20. Run mode of arrival with TT14 and 0% TT12 to create TT13.
21. Run ULOAD3 with TT13 to create loaded legs for OVL trips.
22. Run SORT to combine the loaded legs from Steps 11, 17 and 21 to get loaded legs for 100% HBWORK and 100% HOOOOW trips.
23. Run UPRAS with the 100% loaded legs on the original network to create a PRASOUT file.
24. Finally, run URAP to get statistics on total costs, ridership, etc.

These twenty four steps require the setup of thirty seven jobs (seven jobs for steps 8 and 18, and two jobs for step 11). The job names as well as the input/output file names for each job are documented in Appendix A.1 of this report.

3. RESULTS AND CONCLUSIONS

3.1 ANALYSIS OF RESULTS

The results of the 50%-25%-25% stepwise trip loading process are tabulated in the following spreadsheet. This spreadsheet includes

1. a summary of the number of overloaded lines as well as the overloaded stops in each step of the sequential loading process,
2. a summary of the number of predicted trips and transit shares in each step of loading the Home Based Work trips,
3. a summary of the Home Based Nonwork and the Non Home Based trips loaded to the network in a single step,
4. a summary of the transit boardings by mode during the A.M. peak period as well as the midday off-peak period,
5. a summary of the peak hour vehicle requirements for SCRTD,
6. a summary of the annualized vehicle-hour-traveled (VHT), vehicle-miles-traveled (VMT), and revenue passengers for SCRTD bus system, and
7. a summary of the estimated annual bus operating cost for SCRTD.

From these summaries, first of all we can see that Home Based Work trips represent 18.5% of the total regional daily trips in the region. Although majority of these Home Based Work trips are generally made in the peak and majority of the Home Based Non

CAPACITY RESTRAINT SIMULATION

COR3OS14		UNRESTRAINED SIMULATION	RESTRAINED SIMULATION						
% DEMAND ASSIGNED		100	50	25 NML	25 OVL	75	25 NML	25 OVL	100
ITERATION NO:				1	1		2	2	
LINES BY	4	222	222	222	211	222	222	200	222
MODE	5	78	78	78	61	78	78	60	78
	6	1	1	1	1	1	1	1	1
	7	0	0	0	0	0	0	0	0
	8	212	212	212	212	212	212	212	212
NUMBER OF	MODE 4	34	11			22			28
OVERLOADED LINES	MODE 5	20	17			18			21
NUMBER OF	MODE 4	459	272			397			481
OVERLOADED STOPS	MODE 5	527	399			473			510
HBWORK	AUTO DA	6643863	3321932	1230500	435363	4987795	1123735	545381	6656911
	AUTO SR2	1388103	694052	246245	102838	1043135	223918	126463	1393516
	AUTO SR3+	635447	317724	112052	47650	477426	101649	58582	637657
	TRN	568122	284061	68750	65145	417956	57389	71523	546868
	TOTAL	9234955	4617478	1657643	651055	6926176	1506732	802005	9234913
TRANSIT SHARE (%)									
NML/OVL				4.1	10.06		3.8	8.9	
NML+OVL				5.8			5.6		
CUMULATIVE		6.15	6.15			6.03			5.9
HO	AUTO(VEH)	16082551	16082551						
	AUTO(PRSN)	24928438	24928438						
	TRN(PRSN)	834621	834621						
	TOTAL(PRSN)	25744944	25744944						
OO	AUTO(VEH)	6150480	6150480						
	AUTO(PRSN)	10531836	10531836						
	TRN(PRSN)	163724	163724						
	TOTAL(PRSN)	10695989	10695989						
OW	AUTO(VEH)	2513550	2513550						
	AUTO(PRSN)	4221737	4221737						
	TRN(PRSN)	91507	91507						
	TOTAL(PRSN)	4313397	4313397						

CAPACITY RESTRAINT SIMULATION

COR3OS14	UNRESTRAINED SIMULATION	RESTRAINED SIMULATION					
% DEMAND ASSIGNED	100	50	25 NML	25 OVL	75	25 NML	25 OVL	100
ITERATION NO:			1	1		2	2	
HOOOOW AUTO(VEH)	24746507	24746507						
AUTO(PRSN)	39681980	39681980						
TRN(PRSN)	1089846	1089846						
TOTAL(PRSN)	40754329	40754329						
AM PRO MD4 BRDG	112907	77052			94693			111333
MD5 BRDG	33025	22747			28086			31457
MD6 BRDG	25517	18092			22150			25878
MD7 BRDG	0	0			0			0
MD8 BRDG	28597	21575			25058			28762
TOTAL	200046	139466			169987			197430
MD PRO MD4 BRDG	67712	60321			60129			63599
MD5 BRDG	5774	4918			5453			5919
MD6 BRDG	8461	7700			8185			8631
MD7 BRDG	0	0			0			0
MD8 BRDG	16986	15417			16098			16955
TOTAL	98933	88356			89865			95104
DAILY...RTD ONLY								
CODED PK VEH	1698	1698			1698			1698
OP VEH	1027	1027			1027			1027
LOADED PK VEH	1930	1382			1659			1927
OP VEH	1080	981			1041			1091
NOMINAL PK VEH	2066	2065			1822			2054
OP VEH	1129	1006			1078			1143
MODIFIED PK VEH	2066	2065			1822			2054
OP VEH	1129	1006			1071			1143
ANNUALIZED...								
RTDBUS: VHT	8227096	6936172			7624980			8244430

CAPACITY RESTRAINT SIMULATION

COR30S14	UNRESTRAINED SIMULATION	RESTRAINED SIMULATION					
% DEMAND ASSIGNED	100	50	25 NML	25 OVL	75	25 NML	25 OVL	100
ITERATION NO:			1	1		2	2	
VMT	105229301	87951704			97578640			105440190
PSGRS	499671298	341493000			420240210			488596511
MRTRL: VHT	43776	39186			43776			43376
VMT	1021073	913973			1021073			1021073
PSGRS	89042144	6313258			77292784			90301824
LRT: VHT	0	0			0			0
VMT	0	0			0			0
PSGRS	0	0			0			0
REGIONAL: VHT	10731488	9282182			10041928			10752158
VMT	135702261	118076533			128653902			137783442
PSGRS	697298638	486046373			592496163			688274212
ANNUAL BUS OPERATING COST	$539,942,849	$468,577,784			$500,577,784			$539,013,752

Work and Non Home Based trips made in the off-peak periods, when loading 50% of Home Based Work trips and 100% of Home Based Nonwork and Non Home Based trips in the begin of the process, we have in fact loaded 90.75% of regional trips to the network. Such an extensive loading proportion in the beginning of the process may result in a significant number of overloaded lines right after the initial loading. Indeed, looking at the numbers of overloaded lines and stops in the first part of the spreadsheet, we can see that with this initial loading 11 local lines and 17 express lines in the SCRTD bus system are overloaded. In total of 671 bus stops are overloaded either in one direction or in both directions. Further 25% of Home Based Work trips (i.e. 4.625% of regional trips) loaded to the network in the first iteration further overloaded 11 more local bus lines and 1 more express lines, which correspond to 125 additional overloaded local bus stops and 74 additional overloaded express bus stops. These results suggest that the portion of the Home Based Work trips in the initial loading may be reduced from 50% to 25% or even 10%.

Secondly, from the second portion of the spreadsheet, we can see that the overloaded trip interchanges are occurred mainly in the areas where bus service is already extensive and high level of transit shares are already in existence. From this spreadsheet we can see that the transit share in the first 25% overloaded O-D pairs was 10.06%. And the transit share in the second 25%

overloaded O-D paris was 8.9%. Both were higher than the 6% average of current Home Based Work trips. This means that even if the overloaded lines in the minimum path were removed, transit riders continue stay on transit mode using less convenient path found in the reduced network. Thus, we still observe high transit share in the overloaded trip interchanges where overloaded lines have been removed. However, overall speaking, removal of overloaded lines does reduce the regional transit share. From this spreadsheet, we can see that the transit share for Home Based Work trips has been reduced from 6.15% (a case without capacity restraint) to 5.92% (a case with capacity restraint).

Thirdly, looking at the summary of transit boardings by mode and period we can obtain some interpretations. With the multipath capacity restraint procedure in place, mode 4 (RTD local bus) loses 1.4% of riders in the A.M. and 6.1% in the midday, mode 5 (RTD express bus) looses 4.7% of riders in the A.M. and gains 2.5% in the midday, mode 6 (RTD metro rail) gains 1.4% of riders in the A.M. and 2.0% in the midday. Ridership to the companies other than SCRTD will stay approximately constant. The overall effect to SCRTD ridership due to this capacity restraint process is 1.6% ridership reduction in the A.M., 4.6% reduction in the midday, and 2.6% reduction over the day.

Fourthly, from the summary of peak hour vehicle requirements,

annualized VHT, VMT, and revenue passengers in the spreadsheet we can see that the process of removing overloaded lines from the network does indeed reduce the vehicle requirements. The nominal peak vehicles were reduced from 2065 to 2054 vehicles per hour. However, since substantial portion of riders stay with transit mode even if the overloaded lines on the most direct route were removed. Overloading situation will be occurred in the lines of less efficient route due to the additional riders who switched path from the routes encountering overloaded lines. Thus, annualized VHT and VMT are both increased despite the reduction in annualized revenue passengers. Because annualized VHT and VMT are the two primary factors in estimating annualized operating costs of a bus system. Increased VMT and VHT may result in an bus system even more expensive than the original overloaded system. Such a counter-intuitive and unrealistic situation may happen if the percentage of trips applied in each step of the loading process is poorly designed. Ideally in each step the percentage of trips to be loaded should be as few as possible so that in each step few overloaded lines will be identified and removed immediately. With poorly designed loading steps (which uses large percentages such as 50%, 25%, 25% for instance), large number of lines on inefficient routes may be overloaded but not removed immediately. This would produce high level of VHT and VMT, and subsequently operating costs.

As a conclusion of above discussions, loading 50%-25%-25% in

three step provided all the results as expected --- less transit share, less revenue riders, and lower peak vehicle requirements. However, since the portion of trips in each step of loading was not small enough, the annualized VHT and VMT were increased. Due to these increase VHT and VMT the resultant SCRTD bus operating cost estimated from the capacity restraint system was less than a million dollars cheaper than the original unrestraint system. To solve this problem the same capacity restraint procedure was repeated. Instead of 50%-25%-25% of trips loaded in each step, six trip loading steps (50%-10%-10%-10%-10%-10%) were adopted. The results were tabulated in Table 2. As expected that both annualized VHT and VMT were reduced significantly and both are less than those in the unrestraint system. The resultant operating costs were reduced from $540,000,000 for the unrestraint system to $534,000,000 for the restraint.

3.2 RECOMMENDATIONS FOR FURTHER STUDY

It is recommended that further testing of this technique should use a smaller initial assignment of the Home Based Work trips. A rough estimate of the percentage that should be used in the first iteration could be obtained from examining the results of the URAP program for 100% HBWORK and 100% HOOOOW trips assigned. One of the tables in this output lists the excess passenger demand for each line in the network. By calculating the ratio of excess demand to capacity, the user can obtain a rough estimate of the

CAPACITY RESTRAINT SIMULATION
COR30S14

		UNRESTRAINED SIMULATION	RESTRAINED SIMULATION															
% DEMAND ASSIGNED		100	50	10 NML	10 OVL	60	10 NML	10 OVL	70	10 NML	10 OVL	80	10 NML	10 OVL	90	10 NML	10 OVL	100
ITERATION NO:				1	1		2	2		3	3		4	4		5	5	
LINES BY	4	222	222	222	211	222	222	207	222	222	206	222	222	204	222	222	202	222
MODE	5	78	78	78	61	78	78	59	78	78	59	78	78	58	78	78	58	78
	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212
NUMBER OF		34	11			15			16			18			20			20
OVERLOADED LINES		20	17			19			19			20			20			20
NUMBER OF	MODE 4	459	272			321			366			404			443			466
OVERLOADED STOPS	MODE 5	527	399			422			445			469			484			491
HBWORK AUTO DA		6643863	3321932	492200	174145	3988277	480482	186314	4655073	470010	197299	5322382	459352	208223	5989957	453597	214251	6657805
AUTO SR2		1388103	694052	98498	41135	833685	95886	43926	973497	93774	46258	1113529	91512	48645	1253686	90229	50082	1393997
AUTO SR3+		635447	317724	44821	19060	381605	43610	20343	445558	42630	21396	509584	41609	22466	573659	41034	23116	637809
TRN		568122	284061	27500	26058	537619	25470	27406	390495	24460	27611	442566	23063	28591	1494220	22143	28979	545342
TOTAL		9234955	4617478	663057	260422	5540957	620008	277989	6438954	630909	292593	7362456	615585	307903	8285944	607035	316444	9209423
TRANSIT SHARE																		
NML/OVL				4.1	10		4.1	9.85		3.88	9.43		3.74	9.3		3.65	9.16	
NML+OVL					5.8			5.9			5.63			5.6			5.55	
CUMULATIVE			6.07			6.1			6.06			6			5.96			5.92
HO	AUTO(VEH)	16082551	16082551															
	AUTO(PRSN)	24928438	24928438															
	TRN(PRSN)	834621	834621															
	TOTAL(PRSN)	25744944	25744944															
OO	AUTO(VEH)	6150480	6150480															
	AUTO(PRSN)	10531836	10531836															
	TRN(PRSN)	163724	163724															
	TOTAL(PRSN)	10695989	10695989															
OW	AUTO(VEH)	2513550	2513550															
	AUTO(PRSN)	4221737	4221737															

C A P A C I T Y R E S T R A I N T S I M U L A T I O N
C O R 3 0 S 1 4

		UNRESTRAINED SIMULATION		RESTRAINED SIMULATION									
% DEMAND ASSIGNED		100	50	10 NML	10 OVL	60	10 NML	10 OVL	70	10 NML	10 OVL	80	10 NML	10 OVL	90	10 NML	10 OVL	100
ITERATION NO:				1	1		2	2		3	3		4	4		5	5	
	TRN(PRSN)	91507	91507															
	TOTAL(PRSN)	4313397	4313397															
HOOOOW	AUTO(VEH)	24746507	24746507															
	AUTO(PRSN)	39681980	39681980															
	TRN(PRSN)	1089846	1089846															
	TOTAL(PRSN)	40754329	40754329															
AM PRD	MD4 BRDG	112907	77052			84093			90357			97164			103878			108300
	MD5 BRDG	33025	22747			24836			26509			27412			28718			29578
	MD6 BRDG	25517	18092			19663			20901			22358			23792			24661
	MD7 BRDG	0	0			0			0			0			0			0
	MD8 BRDG	28597	21575			23001			23843			25348			26830			27252
	TOTAL	200046	139466			151593			161160			172282			182918			189791
MD PRD	MD4 BRDG	67712	60321			58000			59301			60727			62179			63070
	MD5 BRDG	5774	4918			5163			5340			5552			5785			5921
	MD6 BRDG	8461	7700			7912			8087			8293			8488			8602
	MD7 BRDG	0	0			0			0			0			0			0
	MD8 BRDG	16986	15417			15636			15834			16182			16516			16634
	TOTAL	98933	88356			86111			88562			90754			92968			94227
DAILY...RTD ONLY																		
	CODED PK VEH	1698	1698			1698			1698			1698			1698			1698
	OP VEH	1027	1027			1027			1027			1027			1027			1027
	LOADED PK VEH	1930	1382			1497			1581			1694			1802			1893
	OP VEH	1080	981			1009			1024			1047			1073			1092
	NOMINAL PK VEH	2066	2065			1676			1752			1846			1935			2020
	OP VEH	1129	1006			1037			1057			1091			1115			1137
	MODIFIED PK VEH	2066	2065			1676			1752			1846			1935			2020
	OP VEH	1129	1006			1037			1057			1091			1115			1137

C A P A C I T Y R E S T R A I N T S I M U L A T I O N
COR30S14

	UNRESTRAINED SIMULATION	RESTRAINED SIMULATION								
% DEMAND ASSIGNED	100	50	60	70	80	90	100			
ITERATION NO:		10 NML 1 / 10 OVL 1	10 NML 2 / 10 OVL 2	10 NML 3 / 10 OVL 3	10 NML 4 / 10 OVL 4	10 NML 5 / 10 OVL 5				
ANNUALIZED...										
RTDBUS: VHT	8227096	6936172	7217620	7206406	7720020	7963920	8192570			
VMT	105229301	87951704	91855717	71706765	98244968	101426837	104368358			
PSGRS	499671298	341493000	372757706	388811374	425897045	453705709	471586760			
MRTRL: VHT	43776	39186	39186	39186	43776	43776	43776			
VMT	1021073	913973	913973	913973	1021073	1021073	1021073			
PSGRS	89042144	6313258	68614608	72934464	78018624	83022544	86055248			
LRT: VHT	0	0	0	0	0	0	0			
VMT	0	0	0	0	0	0	0			
PSGRS	0	0	0	0	0	0	0			
REGIONAL: VHT	10731488	9282182	9613312	9834532	10164188	10433880	10682202			
VMT	135702261	118076533	122613757	125415147	129739771	133286573	136508223			
PSGRS	697298638	486046373	528354559	561797349	600164539	638696984	661435777			
ANNUAL BUS OPERATING COST (THOUSANDS)	$539,943	$468,668	$474,485	$487,610	$505,103	$520,446	$533,936			

percentage that should be used in the first iteration so as to get a excess passenger demand to capacity ratio of less than 10% for most of the transit lines. This will increase the accuracy of the procedure.

APPENDIX 1:

INPUT / OUTPUT FILE

DIRECTORY OF 50% , 25%

AND 25% LOADING PROCESS

JOB NUMBER	JOB NAME	I/O FILES
1	JOB1MOA	I: MRP.COR30S14.TT14 MRP.COR30S14.TT12 MRP.FARE.COR30S14.AM.DATA MRP.Y20Z1628.H8 MRP.MOA.STATION.DATA(COR30S14) MRP.ZNTOSTA.MIN.COR30S14.DATA MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA) MRP.COR30S14.AM17 MRP.COR30S14.AE8 MRP.ZNTOSTA.HSK.CORE3.DATA O: MRP.COR30S14.TT13.NML50
2	JOB2ELD3	I: MRP.COR30S14.TT13.NML50 MRP.TNET.COR30S14.AM1.DATA MRP.TNET.COR30S14.AM2.DATA MRP.TNET.COR30S14.AM3.DATA MRP.TNET.COR30S14.AM4.DATA MRP.TNET.COR30S14.AM5.DATA O: MRP.LL.COR30S14.HAM.DATA.NML50 MRP.COR30S14.AM.LOADFILE.NML50
3	J3UOLM	I: MRP.NETWORK.COR30S14.DATA(LINES) MRP.COR30S14.AM.LOADFILE.NML50 MRPGP1.YOSSIE.FORT(USTSINPT) O: MRP.NETWORK.COR30S14.DATA(NEWLINE1) MRP.CAPRESTR.USTOSOUT.DATA(OS140VL1)
4	J4USTS	I: MRP.COR30S14.WPTH MRP.COR30S14.PPTH MRP.COR30S14.KPTH MRP.TT.Y00PA5.HBWORK.DATA O: MRP.TT.Y00PA5.HBWORK.DATA.TT251
5	JOB5MCH	I: MRP.FARE.COR30S14.AM.DATA MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA) MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK2) MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK3) MRP.Y20Z1628.H8 MRP.TT.Y00PA5.HBWORK.DATA.TT251 MRP.COR30S14.AM17 O: MRP.COR30S14.TT14.NML25.ITR1
6	JOB6MOA	I: MRP.COR30S14.TT14.NML25.ITR1 MRP.COR30S14.TT12 MRP.FARE.COR30S14.AM.DATA MRP.MOA.STATION.DATA(COR30S14) MRP.COR30S14.AE8 MRP.ZNTOSTA.MIN.COR30S14.DATA

			MRP.COR30S14.AM17
			MRP.TAZ.MCH.MOA.SCAG00B.DATA
		O:	MRP.COR30S14.TT13.NML25.ITR1
7	JOB7ELD	I:	MRP.COR30S14.WPTH
			MRP.COR30S14.PPTH
			MRP.COR30S14.KPTH
			MRP.COR30S14.TT13.NML25.ITR1
		O:	MRP.LL.COR30S14.HAM.DATA.NML25.ITR1
8	J8UNET	I:	MRP.NETWORK.COR30S14.DATA(NEWLINE1)
			MRP.NETWORK.COR30S14.DATA(LINKS)
			MRP.COORD.CORE2.DATA
		O:	MRP.TNET.OS140VL1.AM1.DATA
			MRP.TNET.OS140VL1.AM2.DATA
			MRP.TNET.OS140VL1.AM3.DATA
			MRP.TNET.OS140VL1.AM4.DATA
			MRP.TNET.OS140VL1.AM5.DATA
8	J8Q	I:	MRP.TNET.OS140VL1.AM1.DATA
8	J8R		MRP.TNET.OS140VL1.AM2.DATA
8	J8S		MRP.TNET.OS140VL1.AM3.DATA
			MRP.TNET.OS140VL1.AM4.DATA
			MRP.TNET.OS140VL1.AM5.DATA
		O:	MRP.OS140VL1.WPTH
			MRP.OS140VL1.WNTL
			MRP.OS140VL1.WNTA
			MRP.OS140VL1.PPTH
			MRP.OS140VL1.PNTL
			MRP.OS140VL1.PNTA
			MRP.OS140VL1.KPTH
			MRP.OS140VL1.KNTA
			MRP.OS140VL1.KNTL
			MRP.OS140VL1.WK10
			MRP.OS140VL1.PR10
			MRP.OS140VL1.KR10
8	J8T	I:	MRP.OS140VL1.WK10
	J8E		MRP.OS140VL1.PR10
			MRP.OS140VL1.KR10
		O:	MRP.OS140VL1.AM17
			MRP.FARE.OS140VL1.AM.DATA
8	J8U	I:	MRP.OS140VL1.WPTH
			MRP.OS140VL1.PPTH
			MRP.OS140VL1.KPTH
		O:	MRP.OS140VL1.AE8
9	JOB9MCH	I:	MRP.FARE.OS140VL1.AM.DATA
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA)
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK2)
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK3)
			MRP.Y20Z1628.H8

			MRP.TT.Y00PA5.HBWORK.DATA.TT251
			MRP.OS140VL1.AM17
		O:	MRP.OS140VL1.TT14.OVL25.ITR1
10	JOB10MOA	I:	MRP.OS140VL1.TT14.OVL25.ITR1
			MRP.COR30S14.TT12
			MRP.FARE.OS140VL1.AM.DATA
			MRP.Y20Z1628.H8
			MRP.MOA.STATION.DATA(OS140VL1)
			MRP.OS140VL1.AE8
			MRP.ZNTOSTA.MIN.OS140VL1.DATA
			MRP.OS140VL1.AM17
		O:	MRP.OS140VL1.TT13.OVL25.ITR1
11	JOB11ELD	I:	MRP.OS140VL1.WPTH
			MRP.OS140VL1.WNTL
			MRP.OS140VL1.WNTA
			MRP.OS140VL1.PPTH
			MRP.OS140VL1.PNTL
			MRP.OS140VL1.PNTA
			MRP.OS140VL1.KPTH
			MRP.OS140VL1.KNTL
			MRP.OS140VL1.KNTA
		O:	MRP.LL.OS140VL1.HAM.DATA.OVL25.ITR1
11A	SORT	I:	MRP.LL.COR30S14.HAM.DATA.NML25.ITR1
			MRP.LL.COR30S14.HAM.DATA.NML50
			MRP.LL.OS140VL1.HAM.DATA.OVL25.ITR1
		O:	MRP.LL.COR30S14.HAM.DATA.ALL75
12	J12ELD	I:	MRP.COR30S14.WPTH
			MRP.COR30S14.WNTL
			MRP.COR30S14.WNTA
			MRP.COR30S14.PPTH
			MRP.COR30S14.PNTL
			MRP.COR30S14.PNTA
			MRP.COR30S14.KPTH
			MRP.COR30S14.KNTL
			MRP.COR30S14.KNTA
		O:	MRP.LL.COR30S14.HAM.DATA.ALL75
			MRP.COR30S14.AM.LOADFILE.ALL75
			MRP.COR30S14.AM.PRASOUT.ALL75
			MRP.COR30S14.URAPOUT.ALL75
			MRP.COR30S14.BUSCOST.ALL75
13	J13ULM	I:	MRP.COR30S14.AM.LOADFILE.ALL75
			MRP.NETWORK.COR30S14.DATA(LINES)
			MRPGP1.YOSSIE.FORT(USTSINPT)
		O:	MRP.NETWORK.COR30S14.DATA(NEWLINE2)
			MRP.CAPRESTR.USTOSOUT.DATA(OS140VL1)

14	J14USTS	I: MRP.COR30S14.WPTH MRP.COR30S14.PPTH MRP.COR30S14.KPTH MRP.TT.Y00PA5.HBWORK.DATA O: MRP.TT.Y00PA5.HBWORK.DATA.TT252
15	J15MCH	I: MRP.FARE.COR30S14.AM.DATA MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA) MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK2) MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK3) MRP.Y20Z1628.H8 MRP.TT.Y00PA5.HBWORK.DATA.TT252 O: MRP.COR30S14.TT14.NML25.ITR2
16	J16MOA	I: MRP.COR30S14.TT14.NML25.ITR2 MRP.COR30S14.TT12 MRP.FARE.COR30S14.AM.DATA MRP.Y20Z1628.H8 MRP.MOA.STATION.DATA(COR30S14) MRP.COR30S14.AE8 MRP.ZNTOSTA.MIN.COR30S14.DATA MRP.COR30S14.AM17 MRP.TAZ.MCH.MOA.SCAG00B.DATA O: MRP.COR30S14.TT13.NML25.ITR2
17	J17ELD	I: MRP.COR30S14.WPTH MRP.COR30S14.WNTL MRP.COR30S14.WNTA MRP.COR30S14.PPTH MRP.COR30S14.PNTL MRP.COR30S14.PNTA MRP.COR30S14.KPTH MRP.COR30S14.KNTA MRP.COR30S14.KNTL MRP.COR30S14.TT13.NML25.ITR2 O: MRP.LL.COR30S14.HAM.DATA.NML25.ITR2
18	J18AUNET	I: MRP.NETWORK.COR30S14.DATA(NEWLINE2) MRP.COORD.CORE2.DATA MRP.NETWORK.COR30S14.DATA(LINKS) O: MRP.TNET.OS140VL2.AM1.DATA MRP.TNET.OS140VL2.AM2.DATA MRP.TNET.OS140VL2.AM3.DATA MRP.TNET.OS140VL2.AM4.DATA MRP.TNET.OS140VL2.AM5.DATA
18	J18Q J18R J18S	I: MRP.TNET.OS140VL2.AM1.DATA MRP.TNET.OS140VL2.AM2.DATA MRP.TNET.OS140VL2.AM3.DATA MRP.TNET.OS140VL2.AM4.DATA

			MRP.TNET.OS140VL2.AM5.DATA
		O:	MRP.OS140VL2.WPTH
			MRP.OS140VL2.WNTL
			MRP.OS140VL2.WNTA
			MRP.OS140VL2.WK10
			MRP.OS140VL2.PPTH
			MRP.OS140VL2.PNTL
			MRP.OS140VL2.PNTA
			MRP.OS140VL2.PR10
			MRP.OS140VL2.KPTH
			MRP.OS140VL2.KNTL
			MRP.OS140VL2.KNTA
			MRP.OS140VL2.KR10
18	J18T	I:	MRP.OS140VL2.WK10
	J18E		MRP.OS140VL2.KR10
			MRP.OS140VL2.PR10
		O:	MRP.OS140VL2.AM17
			MRP.FARE.OS140VL2.AM.DATA
18	J18U	I:	MRP.OS140VL2.WK10
			MRP.OS140VL2.PR10
			MRP.OS140VL2.KR10
		O:	MRP.OS140VL2.AE8
19	J19MCH	I:	MRP.FARE.OS140VL2.AM.DATA
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA)
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK2)
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK3)
			MRP.Y20Z1628.H8
			MRP.TT.Y00PA5.HBWORK.DATA.TT252
			MRP.OS140VL2.AM17
		O:	MRP.OS140VL2.TT14.OVL25.ITR2
20	J20MOA	I:	MRP.OS140VL2.TT14.OVL25.ITR2
			MRP.COR30S14.TT12
			MRP.FARE.OS140VL2.AM.DATA
			MRP.Y20Z1628.H8
			MRP.MOA.STATION.DATA(OS140VL2)
			MRP.OS140VL2.AE8
			MRP.ZNTOSTA.MIN.OS140VL2.DATA
			MRP.OS140VL2.AM17
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(
		O:	MRP.OS140VL2.TT13.OVL25.ITR2
21	J21ELD	I:	MRP.OS140VL2.WPTH
			MRP.OS140VL2.WNTL
			MRP.OS140VL2.WNTA
			MRP.OS140VL2.PPTH
			MRP.OS140VL2.PNTL
			MRP.OS140VL2.PNTA
			MRP.OS140VL2.KPTH

			MRP.OS140VL2.KNTL
			MRP.OS140VL2.KNTA
		O:	MRP.LL.OS140VL2.HAM.DATA.OVL25.ITR2
22	J22SORT	I:	MRP.LL.OS140VL2.HAM.DATA.OVL25.ITR2
			MRP.LL.COR30S14.HAM.DATA.ALL75
			MRP.LL.COR30S14.HAM.DATA.NML25.ITR2
		O:	MRP.LL.COR30S14.HAM.DATA.SM100
23	J23UPRS	I:	MRP.COR30S14.KNTL
			MRP.COR30S14.KNTA
			MRP.LL.COR30S14.HAM.DATA.SM100
		O:	MRP.COR30S14.AM.PRASOUT.SM100
24	J24URAP	I:	MRP.COR30S14.AM.PRASOUT.SM100
			MRP.COR30S14.MD.PRASOUT
			MRP.LL.COR30S14.HAM.DATA.SM100
			MRP.LL.COR30S14.HBS.DATA
		O:	MRP.COR30S14.URAPOUT.SM100
			MRP.COR30S14.BUSCOST.SM100

APPENDIX 2:

INPUT / OUTPUT FILE

DIRECTORY OF 50% , 10%

10% , 10% , 10% , 10%

LOADING PROCESS

JOB NUMBER	JOB NAME	I/O FILES
1	JOB1MOA	I: MRP.COR30S14.TT14 MRP.COR30S14.TT12 MRP.FARE.COR30S14.AM.DATA MRP.Y20Z1628.H8 MRP.MOA.STATION.DATA(COR30S14) MRP.ZNTOSTA.MIN.COR30S14.DATA MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA) MRP.COR30S14.AM17 MRP.COR30S14.AE8 MRP.ZNTOSTA.HSK.CORE3.DATA O: MRP.COR30S14.TT13.NML50
2	JOB2ELD3	I: MRP.COR30S14.TT13.NML50 MRP.TNET.COR30S14.AM1.DATA MRP.TNET.COR30S14.AM2.DATA MRP.TNET.COR30S14.AM3.DATA MRP.TNET.COR30S14.AM4.DATA MRP.TNET.COR30S14.AM5.DATA O: MRP.LL.COR30S14.HAM.DATA.NML50 MRP.COR30S14.AM.LOADFILE.NML50
3	J3UOLM	I: MRP.NETWORK.COR30S14.DATA(LINES) MRP.COR30S14.AM.LOADFILE.NML50 MRPGP1.YOSSIE.FORT(USTSINPT) O: MRP.NETWORK.COR30S14.DATA(LINE101) MRP.CAPRESTR.USTOSOUT.DATA(OS140L1)
4	J4USTS	I: MRP.COR30S14.WPTH MRP.COR30S14.PPTH MRP.COR30S14.KPTH MRP.TT.Y00PA5.HBWORK.DATA O: MRP.TT.Y00PA5.HBWORK.DATA.TT101
5	JOB5MCH	I: MRP.FARE.COR30S14.AM.DATA MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA) MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK2) MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK3) MRP.Y20Z1628.H8 MRP.TT.Y00PA5.HBWORK.DATA.TT101 MRP.COR30S14.AM17 O: MRP.COR30S14.TT14.NML10.ITR1
6	JOB6MOA	I: MRP.COR30S14.TT14.NML10.ITR1 MRP.COR30S14.TT12 MRP.FARE.COR30S14.AM.DATA MRP.MOA.STATION.DATA(COR30S14) MRP.COR30S14.AE8 MRP.ZNTOSTA.MIN.COR30S14.DATA

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                                    MRP.COR30S14.AM17
                                    MRP.TAZ.MCH.MOA.SCAG00B.DATA
                                 O: MRP.COR30S14.TT13.NML10.ITR1

 7              JOB7ELD          I: MRP.COR30S14.WPTH
                                    MRP.COR30S14.PPTH
                                    MRP.COR30S14.KPTH
                                    MRP.COR30S14.TT13.NML10.ITR1
                                 O: MRP.LL.COR30S14.HAM.DATA.NML10.ITR1

 8              J8UNET           I: MRP.NETWORK.COR30S14.DATA(LINE101)
                                    MRP.NETWORK.COR30S14.DATA(LINKS)
                                    MRP.COORD.CORE2.DATA
                                 O: MRP.TNET.OS140L1.AM1.DATA
                                    MRP.TNET.OS140L1.AM2.DATA
                                    MRP.TNET.OS140L1.AM3.DATA
                                    MRP.TNET.OS140L1.AM4.DATA
                                    MRP.TNET.OS140L1.AM5.DATA
 8              J8Q              I: MRP.TNET.OS140L1.AM1.DATA
 8              J8R                 MRP.TNET.OS140L1.AM2.DATA
 8              J8S                 MRP.TNET,OS140L1.AM3.DATA
                                    MRP.TNET.OS140L1.AM4.DATA
                                    MRP.TNET.OS140L1.AM5.DATA
                                 O: MRP.OS140L1.WPTH
                                    MRP.OS140L1.WNTL
                                    MRP.OS140L1.WNTA
                                    MRP.OS140L1.PPTH
                                    MRP.OS140L1.PNTL
                                    MRP.OS140L1.PNTA
                                    MRP.OS140L1.KPTH
                                    MRP.OS140L1.KNTA
                                    MRP.OS140L1.KNTL
                                    MRP.OS140L1.WK10
                                    MRP.OS140L1.PR10
                                    MRP.OS140L1.KR10
 8              J8T              I: MRP.OS140L1.WK10
                J8E                 MRP.OS140L1.PR10
                                    MRP.OS140L1.KR10
                                 O: MRP.OS140L1.AM17
                                    MRP.FARE.OS140L1.AM.DATA
 8              J8U              I: MRP.OS140L1.WPTH
                                    MRP.OS140L1.PPTH
                                    MRP.OS140L1.KPTH
                                 O: MRP.OS140L1.AE8

 9              JOB9MCH          I: MRP.FARE.OS140L1.AM.DATA
                                    MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA)
                                    MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK2)
                                    MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK3)
                                    MRP.Y20Z1628.H8
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			MRP.TT.Y00PA5.HBWORK.DATA.TT101
			MRP.OS140L1.AM17
		O:	MRP.OS140L1.TT14.OVL10.ITR1
10	JOB10M0A	I:	MRP.OS140L1.TT14.OVL10.ITR1
			MRP.COR30S14.TT12
			MRP.FARE.OS140L1.AM.DATA
			MRP.Y20Z1628.H8
			MRP.MOA.STATION.DATA(OS140L1)
			MRP.OS140L1.AE8
			MRP.ZNTOSTA.MIN.OS140L1.DATA
			MRP.OS140L1.AM17
		O:	MRP.OS140L1.TT13.OVL10.ITR1
11	JOB11ELD	I:	MRP.OS140L1.WPTH
			MRP.OS140L1.WNTL
			MRP.OS140L1.WNTA
			MRP.OS140L1.PPTH
			MRP.OS140L1.PNTL
			MRP.OS140L1.PNTA
			MRP.OS140L1.KPTH
			MRP.OS140L1.KNTL
			MRP.OS140L1.KNTA
		O:	MRP.LL.OS140L1.HAM.DATA.OVL10.ITR1
11A	SORT	I:	MRP.LL.COR30S14.HAM.DATA.NML10.ITR1
			MRP.LL.COR30S14.HAM.DATA.NML50
			MRP.LL.OS140L1.HAM.DATA.OVL10.ITR1
		O:	MRP.LL.COR30S14.HAM.DATA.ALL60
12	J12ELD	I:	MRP.COR30S14.WPTH
			MRP.COR30S14.WNTL
			MRP.COR30S14.WNTA
			MRP.COR30S14.PPTH
			MRP.COR30S14.PNTL
			MRP.COR30S14.PNTA
			MRP.COR30S14.KPTH
			MRP.COR30S14.KNTL
			MRP.COR30S14.KNTA
		O:	MRP.LL.COR30S14.HAM.DATA.ALL60
			MRP.COR30S14.AM.LOADFILE.ALL60
			MRP.COR30S14.AM.PRASOUT.ALL60
			MRP.COR30S14.URAPOUT.ALL60
			MRP.COR30S14.BUSCOST.ALL60
13	J13ULM	I:	MRP.COR30S14.AM.LOADFILE.ALL60
			MRP.NETWORK.COR30S14.DATA(LINES)
			MRPGP1.YOSSIE.FORT(USTSINPT)
		O:	MRP.NETWORK.COR30S14.DATA(LINE102)
			MRP.CAPRESTR.USTOSOUT.DATA(OS140L2)

14	J14USTS	I: MRP.COR30S14.WPTH MRP.COR30S14.PPTH MRP.COR30S14.KPTH MRP.TT.Y00PA5.HBWORK.DATA O: MRP.TT.Y00PA5.HBWORK.DATA.TT102
15	J15MCH	I: MRP.FARE.COR30S14.AM.DATA MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA) MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK2) MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK3) MRP.Y20Z1628.H8 MRP.TT.Y00PA5.HBWORK.DATA.TT102 O: MRP.COR30S14.TT14.NML10.ITR2
16	J16MOA	I: MRP.COR30S14.TT14.NML10.ITR2 MRP.COR30S14.TT12 MRP.FARE.COR30S14.AM.DATA MRP.Y20Z1628.H8 MRP.MOA.STATION.DATA(COR30S14) MRP.COR30S14.AE8 MRP.ZNTOSTA.MIN.COR30S14.DATA MRP.COR30S14.AM17 MRP.TAZ.MCH.MOA.SCAG00B.DATA O: MRP.COR30S14.TT13.NML10.ITR2
17	J17ELD	I: MRP.COR30S14.WPTH MRP.COR30S14.WNTL MRP.COR30S14.WNTA MRP.COR30S14.PPTH MRP.COR30S14.PNTL MRP.COR30S14.PNTA MRP.COR30S14.KPTH MRP.COR30S14.KNTA MRP.COR30S14.KNTL MRP.COR30S14.TT13.NML10.ITR2 O: MRP.LL.COR30S14.HAM.DATA.NML10.ITR2
18	J18AUNET	I: MRP.NETWORK.COR30S14.DATA(LINE102) MRP.COORD.CORE2.DATA MRP.NETWORK.COR30S14.DATA(LINKS) O: MRP.TNET.OS140L2.AM1.DATA MRP.TNET.OS140L2.AM2.DATA MRP.TNET.OS140L2.AM3.DATA MRP.TNET.OS140L2.AM4.DATA MRP.TNET.OS140L2.AM5.DATA
18	J18Q J18R J18S	I: MRP.TNET.OS140L2.AM1.DATA MRP.TNET.OS140L2.AM2.DATA MRP.TNET.OS140L2.AM3.DATA MRP.TNET.OS140L2.AM4.DATA

			MRP.TNET.OS140L2.AM5.DATA
		O:	MRP.OS140L2.WPTH
			MRP.OS140L2.WNTL
			MRP.OS140L2.WNTA
			MRP.OS140L2.WK10
			MRP.OS140L2.PPTH
			MRP.OS140L2.PNTL
			MRP.OS140L2.PNTA
			MRP.OS140L2.PR10
			MRP.OS140L2.KPTH
			MRP.OS140L2.KNTL
			MRP.OS140L2.KNTA
			MRP.OS140L2.KR10
18	J18T	I:	MRP.OS140L2.WK10
	J18E		MRP.OS140L2.KR10
			MRP.OS140L2.PR10
		O:	MRP.OS140L2.AM17
			MRP.FARE.OS140L2.AM.DATA
18	J18U	I:	MRP.OS140L2.WK10
			MRP.OS140L2.PR10
			MRP.OS140L2.KR10
		O:	MRP.OS140L2.AE8
19	J19MCH	I:	MRP.FARE.OS140L2.AM.DATA
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA)
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK2)
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK3)
			MRP.Y20Z1628.H8
			MRP.TT.Y00PA5.HBWORK.DATA.TT102
			MRP.OS140L2.AM17
		O:	MRP.OS140L2.TT14.OVL10.ITR2
20	J20MOA	I:	MRP.OS140L2.TT14.OVL10.ITR2
			MRP.COR30S14.TT12
			MRP.FARE.OS140L2.AM.DATA
			MRP.Y20Z1628.H8
			MRP.MOA.STATION.DATA(COR30S14)
			MRP.OS140L2.AE8
			MRP.ZNTOSTA.MIN.COR30S14.DATA
			MRP.OS140L2.AM17
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA)
		O:	MRP.OS140L2.TT13.OVL10.ITR2
21	J21ELD	I:	MRP.OS140L2.WPTH
			MRP.OS140L2.WNTL
			MRP.OS140L2.WNTA
			MRP.OS140L2.PPTH
			MRP.OS140L2.PNTL
			MRP.OS140L2.PNTA
			MRP.OS140L2.KPTH

		MRP.OS140L2.KNTL
		MRP.OS140L2.KNTA
		O: MRP.LL.OS140L2.HAM.DATA.OVL10.ITR2
22	J22SORT	I: MRP.LL.OS140L2.HAM.DATA.OVL10.ITR2
		MRP.LL.COR30S14.HAM.DATA.ALL60
		MRP.LL.COR30S14.HAM.DATA.NML10.ITR2
		O: MRP.LL.COR30S14.HAM.DATA.ALL70
23	J23UPRS	I: MRP.COR30S14.KNTL
		MRP.COR30S14.KNTA
		MRP.LL.COR30S14.HAM.DATA.ALL70
		O: MRP.COR30S14.AM.PRASOUT.ALL70
24	J24URAP	I: MRP.COR30S14.AM.PRASOUT.ALL70
		MRP.COR30S14.MD.PRASOUT
		MRP.LL.COR30S14.HAM.DATA.ALL70
		MRP.LL.COR30S14.HBS.DATA
		O: MRP.COR30S14.URAPOUT.ALL70
		MRP.COR30S14.BUSCOST.ALL70
25	J25ULM	I: MRP.COR30S14.AM.LOADFILE.ALL70
		MRP.NETWORK.COR30S14.DATA(LINES)
		MRPGP1.YOSSIE.FORT(USTSINPT)
		O: MRP.NETWORK.COR30S14.DATA(LINE103)
		MRP.CAPRESTR.USTOSOUT.DATA(OS140L3)
26	J26USTS	I: MRP.COR30S14.WPTH
		MRP.COR30S14.PPTH
		MRP.COR30S14.KPTH
		MRP.TT.Y00PA5.HBWORK.DATA
		O: MRP.TT.Y00PA5.HBWORK.DATA.TT103
27	J27MCH	I: MRP.FARE.COR30S14.AM.DATA
		MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA)
		MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK2)
		MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK3)
		MRP.Y20Z1628.H8
		MRP.TT.Y00PA5.HBWORK.DATA.TT103
		O: MRP.COR30S14.TT14.NML10.ITR3
28	J28MOA	I: MRP.COR30S14.TT14.NML10.ITR3
		MRP.COR30S14.TT12
		MRP.FARE.COR30S14.AM.DATA
		MRP.Y20Z1628.H8
		MRP.MOA.STATION.DATA(COR30S14)
		MRP.COR30S14.AE8
		MRP.ZNTOSTA.MIN.COR30S14.DATA
		MRP.COR30S14.AM17
		MRP.TAZ.MCH.MOA.SCAG00B.DATA

		O: MRP.COR30S14.TT13.NML10.ITR3
29	J29ELD	I: MRP.COR30S14.WPTH
		MRP.COR30S14.WNTL
		MRP.COR30S14.WNTA
		MRP.COR30S14.PPTH
		MRP.COR30S14.PNTL
		MRP.COR30S14.PNTA
		MRP.COR30S14.KPTH
		MRP.COR30S14.KNTA
		MRP.COR30S14.KNTL
		MRP.COR30S14.TT13.NML10.ITR3
		O: MRP.LL.COR30S14.HAM.DATA.NML10.ITR3
30	J30AUNET	I: MRP.NETWORK.COR30S14.DATA(LINE103)
		MRP.COORD.CORE2.DATA
		MRP.NETWORK.COR30S14.DATA(LINKS)
		O: MRP.TNET.OS140L3.AM1.DATA
		MRP.TNET.OS140L3.AM2.DATA
		MRP.TNET.OS140L3.AM3.DATA
		MRP.TNET,OS140L3.AM4.DATA
		MRP.TNET.OS140L3.AM5.DATA
30	J30Q	I: MRP.TNET.OS140L3.AM1.DATA
	J30R	MRP.TNET.OS140L3.AM2.DATA
	J30S	MRP.TNET.OS140L3.AM3.DATA
		MRP.TNET.OS140L3.AM4.DATA
		MRP.TNET.OS140L3.AM5.DATA
		O: MRP.OS140L3.WPTH
		MRP.OS140L3.WNTL
		MRP.OS140L3.WNTA
		MRP.OS140L3.WK10
		MRP.OS140L3.PPTH
		MRP.OS140L3.PNTL
		MRP.OS140L3.PNTA
		MRP.OS140L3.PR10
		MRP.OS140L3.KPTH
		MRP.OS140L3.KNTL
		MRP.OS140L3.KNTA
		MRP.OS140L3.KR10
30	J30T	I: MRP.OS140L3.WK10
	J30E	MRP.OS140L3.KR10
		MRP.OS140L3.PR10
		O: MRP.OS140L3.AM17
		MRP.FARE.OS140L3.AM.DATA
30	J30U	I: MRP.OS140L3.WK10
		MRP.OS140L3.PR10
		MRP.OS140L3.KR10
		O: MRP.OS140L3.AE8
31	J31MCH	I: MRP.FARE.OS140L3.AM.DATA

			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA)
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK2)
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK3)
			MRP.Y20Z1628.H8
			MRP.TT.Y00PA5.HBWORK.DATA.TT103
			MRP.OS140L3.AM17
		O:	MRP.OS140L3.TT14.OVL10.ITR3
32	J32MOA	I:	MRP.OS140L3.TT14.OVL10.ITR3
			MRP.COR30S14.TT12
			MRP.FARE.OS140L3.AM.DATA
			MRP.Y20Z1628.H8
			MRP.MOA.STATION.DATA(COR30S14)
			MRP.OS140L3.AE8
			MRP.ZNTOSTA.MIN.COR30S14.DATA
			MRP.OS140L3.AM17
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA)
		O:	MRP.OS140L3.TT13.OVL10.ITR3
33	J33ELD	I:	MRP.OS140L3.WPTH
			MRP.OS140L3.WNTL
			MRP.OS140L3.WNTA
			MRP.OS140L3.PPTH
			MRP.OS140L3.PNTL
			MRP.OS140L3.PNTA
			MRP.OS140L3.KPTH
			MRP.OS140L3.KNTL
			MRP.OS140L3.KNTA
		O:	MRP.LL.OS140L3.HAM.DATA.OVL10.ITR3
34	J34SORT	I:	MRP.LL.OS140L3.HAM.DATA.OVL10.ITR3
			MRP.LL.COR30S14.HAM.DATA.ALL70
			MRP.LL.COR30S14.HAM.DATA.NML10.ITR3
		O:	MRP.LL.COR30S14.HAM.DATA.ALL80
35	J35UPRS	I:	MRP.COR30S14.KNTL
			MRP.COR30S14.KNTA
			MRP.LL.COR30S14.HAM.DATA.ALL80
		O:	MRP.COR30S14.AM.PRASOUT.ALL80
36	J36URAP	I:	MRP.COR30S14.AM.PRASOUT.ALL80
			MRP.COR30S14.MD.PRASOUT
			MRP.LL.COR30S14.HAM.DATA.ALL80
			MRP.LL.COR30S14.HBS.DATA
		O:	MRP.COR30S14.URAPOUT.ALL80
			MRP.COR30S14.BUSCOST.ALL80
37	J37ULM	I:	MRP.COR30S14.AM.LOADFILE.ALL80
			MRP.NETWORK.COR30S14.DATA(LINES)
			MRPGP1.YOSSIE.FORT(USTSINPT)

		O: MRP.NETWORK.COR30S14.DATA(LINE104) MRP.CAPRESTR.USTOSOUT.DATA(OS140L4)
38	J38USTS	I: MRP.COR30S14.WPTH MRP.COR30S14.PPTH MRP.COR30S14.KPTH MRP.TT.Y00PA5.HBWORK.DATA O: MRP.TT.Y00PA5.HBWORK.DATA.TT104
39	J39MCH	I: MRP.FARE.COR30S14.AM.DATA MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA) MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK2) MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK3) MRP.Y20Z1628.H8 MRP.TT.Y00PA5.HBWORK.DATA.TT104 O: MRP.COR30S14.TT14.NML10.ITR4
40	J40MOA	I: MRP.COR30S14.TT14.NML10.ITR4 MRP.COR30S14.TT12 MRP.FARE.COR30S14.AM.DATA MRP.Y20Z1628.H8 MRP.MOA.STATION.DATA(COR30S14) MRP.COR30S14.AE8 MRP.ZNTOSTA.MIN.COR30S14.DATA MRP.COR30S14.AM17 MRP.TAZ.MCH.MOA.SCAG00B.DATA O: MRP.COR30S14.TT13.NML10.ITR4
41	J41ELD	I: MRP.COR30S14.WPTH MRP.COR30S14.WNTL MRP.COR30S14.WNTA MRP.COR30S14.PPTH MRP.COR30S14.PNTL MRP.COR30S14.PNTA MRP.COR30S14.KPTH MRP.COR30S14.KNTA MRP.COR30S14.KNTL MRP.COR30S14.TT13.NML10.ITR4 O: MRP.LL.COR30S14.HAM.DATA.NML10.ITR4
42	J42AUNET	I: MRP.NETWORK.COR30S14.DATA(LINE104) MRP.COORD.CORE2.DATA MRP.NETWORK.COR30S14.DATA(LINKS) O: MRP.TNET.OS140L4.AM1.DATA MRP.TNET.OS140L4.AM2.DATA MRP.TNET.OS140L4.AM3.DATA MRP.TNET.OS140L4.AM4.DATA MRP.TNET.OS140L4.AM5.DATA
42	J42Q J42R	I: MRP.TNET.OS140L4.AM1.DATA MRP.TNET.OS140L4.AM2.DATA

	J42S		MRP.TNET.OS140L4.AM3.DATA
			MRP.TNET.OS140L4.AM4.DATA
			MRP.TNET.OS140L4.AM5.DATA
		O:	MRP.OS140L4.WPTH
			MRP.OS140L4.WNTL
			MRP.OS140L4.WNTA
			MRP.OS140L4.WK10
			MRP.OS140L4.PPTH
			MRP.OS140L4.PNTL
			MRP.OS140L4.PNTA
			MRP.OS140L4.PR10
			MRP.OS140L4.KPTH
			MRP.OS140L4.KNTL
			MRP.OS140L4.KNTA
			MRP.OS140L4.KR10
42	J42T	I:	MRP.OS140L4.WK10
	J42E		MRP.OS140L4.KR10
			MRP.OS140L4.PR10
		O:	MRP.OS140L4.AM17
			MRP.FARE.OS140L4.AM.DATA
42	J42U	I:	MRP.OS140L4.WK10
			MRP.OS140L4.PR10
			MRP.OS140L4.KR10
		O:	MRP.OS140L4.AE8
43	J43MCH	I:	MRP.FARE.OS140L4.AM.DATA
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA)
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK2)
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK3)
			MRP.Y20Z1628.H8
			MRP.TT.Y00PA5.HBWORK.DATA.TT104
			MRP.OS140L4.AM17
		O:	MRP.OS140L4.TT14.OVL10.ITR4
44	J44MOA	I:	MRP.OS140L4.TT14.OVL10.ITR4
			MRP.COR30S14.TT12
			MRP.FARE.OS140L4.AM.DATA
			MRP.Y20Z1628.H8
			MRP.MOA.STATION.DATA(COR30S14)
			MRP.OS140L4.AE8
			MRP.ZNTOSTA.MIN.COR30S14.DATA
			MRP.OS140L4.AM17
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA)
		O:	MRP.OS140L4.TT13.OVL10.ITR4
45	J45ELD	I:	MRP.OS140L4.WPTH
			MRP.OS140L4.WNTL
			MRP.OS140L4.WNTA
			MRP.OS140L4.PPTH
			MRP.OS140L4.PNTL

			MRP.OS140L4.PNTA
			MRP.OS140L4.KPTH
			MRP.OS140L4.KNTL
			MRP.OS140L4.KNTA
		O:	MRP.LL.OS140L4.HAM.DATA.OVL10.ITR4
46	J46SORT	I:	MRP.LL.OS140L4.HAM.DATA.OVL10.ITR4
			MRP.LL.COR30S14.HAM.DATA.ALL80
			MRP.LL.COR30S14.HAM.DATA.NML10.ITR4
		O:	MRP.LL.COR30S14.HAM.DATA.ALL80
46	J46UPRS	I:	MRP.COR30S14.KNTL
			MRP.COR30S14.KNTA
			MRP.LL.COR30S14.HAM.DATA.ALL80
		O:	MRP.COR30S14.AM.PRASOUT.ALL90
46	J46URAP	I:	MRP.COR30S14.AM.PRASOUT.ALL90
			MRP.COR30S14.MD.PRASOUT.ALL90
			MRP.LL.COR30S14.HAM.DATA.ALL90
			MRP.LL.COR30S14.HBS.DATA
		O:	MRP.COR30S14.URAPOUT.ALL90
			MRP.COR30S14.BUSCOST.ALL90
47	J47ULM	I:	MRP.COR30S14.AM.LOADFILE.ALL90
			MRP.NETWORK.COR30S14.DATA(LINES)
			MRPGP1.YOSSIE.FORT(USTSINPT)
		O:	MRP.NETWORK.COR30S14.DATA(LINE105)
			MRP.CAPRESTR.USTOSOUT.DATA(OS140L5)
48	J48USTS	I:	MRP.COR30S14.WPTH
			MRP.COR30S14.PPTH
			MRP.COR30S14.KPTH
			MRP.TT.Y00PA5.HBWORK.DATA
		O:	MRP.TT.Y00PA5.HBWORK.DATA.TT105
49	J49MCH	I:	MRP.FARE.COR30S14.AM.DATA
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA)
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK2)
			MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK3)
			MRP.Y20Z1628.H8
			MRP.TT.Y00PA5.HBWORK.DATA.TT105
		O:	MRP.COR30S14.TT14.NML10.ITR5
50	J50MOA	I:	MRP.COR30S14.TT14.NML10.ITR5
			MRP.COR30S14.TT12
			MRP.FARE.COR30S14.AM.DATA
			MRP.Y20Z1628.H8
			MRP.MOA.STATION.DATA(COR30S14)
			MRP.COR30S14.AE8
			MRP.ZNTOSTA.MIN.COR30S14.DATA

			MRP.COR30S14.AM17
			MRP.TAZ.MCH.MOA.SCAG00B.DATA
		O:	MRP.COR30S14.TT13.NML10.ITR5
51		I:	MRP.COR30S14.WPTH
			MRP.COR30S14.WNTL
			MRP.COR30S14.WNTA
			MRP.COR30S14.PPTH
			MRP.COR30S14.PNTL
			MRP.COR30S14.PNTA
			MRP.COR30S14.KPTH
			MRP.COR30S14.KNTA
			MRP.COR30S14.KNTL
			MRP.COR30S14.TT13.NML10.ITR5
		O:	MRP.LL.COR30S14.HAM.DATA.NML10.ITR5
52	J52AUNET	I:	MRP.NETWORK.COR30S14.DATA(LINE104)
			MRP.COORD.CORE2.DATA
			MRP.NETWORK.COR30S14.DATA(LINKS)
		O:	MRP.TNET.OS140L5.AM1.DATA
			MRP.TNET.OS140L5.AM2.DATA
			MRP.TNET.OS140L5.AM3.DATA
			MRP.TNET.OS140L5.AM4.DATA
			MRP.TNET.OS140L5.AM5.DATA
53	J53Q	I:	MRP.TNET.OS140L5.AM1.DATA
	J53R		MRP.TNET.OS140L5.AM2.DATA
	J53S		MRP.TNET.OS140L5.AM3.DATA
			MRP.TNET.OS140L5.AM4.DATA
			MRP.TNET.OS140L5.AM5.DATA
		O:	MRP.OS140L5.WPTH
			MRP.OS140L5.WNTL
			MRP.OS140L5.WNTA
			MRP.OS140L5.WK10
			MRP.OS140L5.PPTH
			MRP.OS140L5.PNTL
			MRP.OS140L5.PNTA
			MRP.OS140L5.PR10
			MRP.OS140L5.KPTH
			MRP.OS140L5.KNTL
			MRP.OS140L5.KNTA
			MRP.OS140L5.KR10
54	J54T	I:	MRP.OS140L5.WK10
	J54E		MRP.OS140L5.KR10
			MRP.OS140L5.PR10
		O:	MRP.OS140L5.AM17
			MRP.FARE.OS140L5.AM.DATA
54	J54U	I:	MRP.OS140L5.WK10
			MRP.OS140L5.PR10
			MRP.OS140L5.KR10
		O:	MRP.OS140L5.AE8

55	J55MCH	I: MRP.FARE.OS140L5.AM.DATA MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA) MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK2) MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK3) MRP.Y20Z1628.H8 MRP.TT.Y00PA5.HBWORK.DATA.TT104 MRP.OS140L5.AM17 O: MRP.OS140L5.TT14.OVL10.ITR5
56	J56MOA	I: MRP.OS140L5.TT14.OVL10.ITR5 MRP.COR30S14.TT12 MRP.FARE.OS140L5.AM.DATA MRP.Y20Z1628.H8 MRP.MOA.STATION.DATA(COR30S14) MRP.OS140L5.AE8 MRP.ZNTOSTA.MIN.COR30S14.DATA MRP.OS140L5.AM17 MRP.TAZ.MCH.MOA.SCAG00B.DATA(WORK1MOA) O: MRP.OS140L5.TT13.OVL10.ITR5
57	J57ELD	I: MRP.OS140L5.WPTH MRP.OS140L5.WNTL MRP.OS140L5.WNTA MRP.OS140L5.PPTH MRP.OS140L5.PNTL MRP.OS140L5.PNTA MRP.OS140L5.KPTH MRP.OS140L5.KNTL MRP.OS140L5.KNTA O: MRP.LL.OS140L5.HAM.DATA.OVL10.ITR5
57	J57SORT	I: MRP.LL.OS140L5.HAM.DATA.OVL10.ITR5 MRP.LL.COR30S14.HAM.DATA.ALL90 MRP.LL.COR30S14.HAM.DATA.NML10.ITR5 O: MRP.LL.COR30S14.HAM.DATA.ALL100
58	J58UPRS	I: MRP.COR30S14.KNTL MRP.COR30S14.KNTA MRP.LL.COR30S14.HAM.DATA.ALL100 O: MRP.COR30S14.AM.PRASOUT.ALL100
58	J58URAP	I: MRP.COR30S14.AM.PRASOUT.ALL100 MRP.COR30S14.MD.PRASOUT.ALL100 MRP.LL.COR30S14.HAM.DATA.ALL100 MRP.LL.COR30S14.HBS.DATA O: MRP.COR30S14.URAPOUT.ALL100 MRP.COR30S14.BUSCOST.ALL100