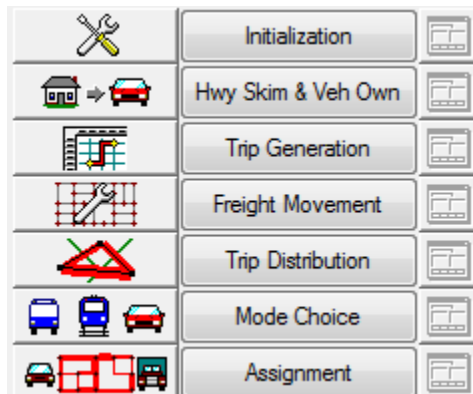# Nashville Regional Model Transition
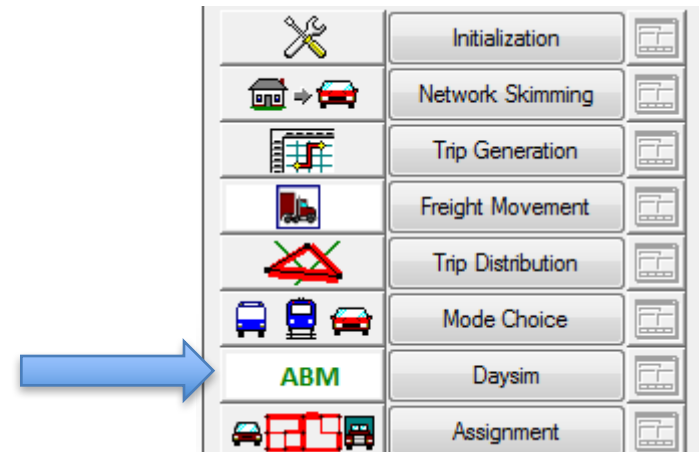
TBM to ABM

Hary Prawiranata

TBM vs ABM

TBM

- Trips are generated from zonal aggregation of households
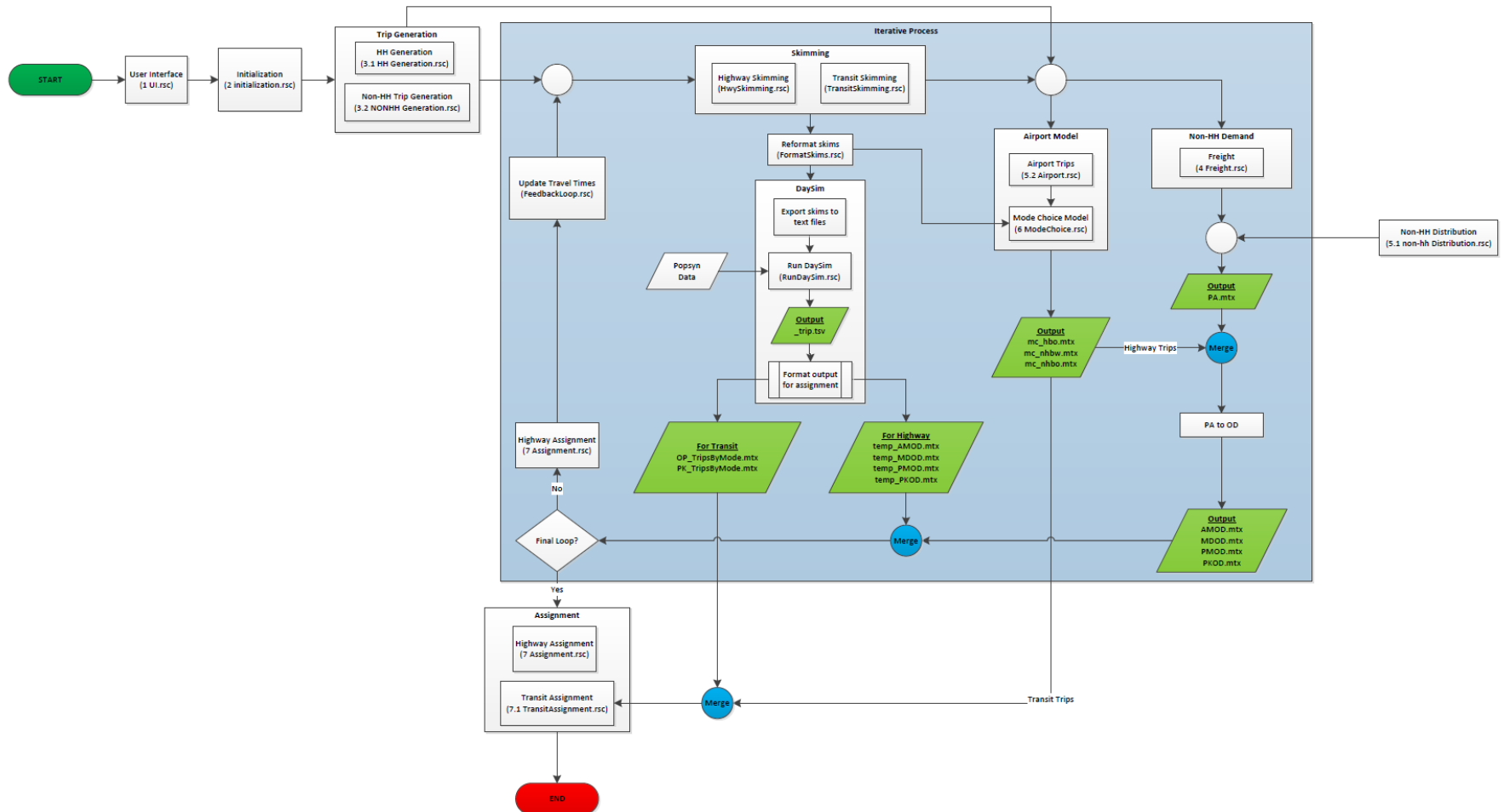

ABM

- Simulation of individual households and persons (by Daysim)

Parts of TBM in ABM

TAZ to MAZ

- ## TAZ = 2,817

TAZ 2327	
POP10	500
HH10	181
EMP10	17.33
EMP_ARG	11.02
EMP_MANU	0
EMP_TRANS	0
EMP_RET	0
EMP_OFFICE	6.31
HHSIZE_1	25
HHSIZE_2	58
HHSIZE_3	28
HHSIZE_4PL	46
INCOME_25K	11
INCOME_50K	9
INCOME_75K	22
INCOME_100	35
INCOME_101	80

- ## MAZ = 33,117
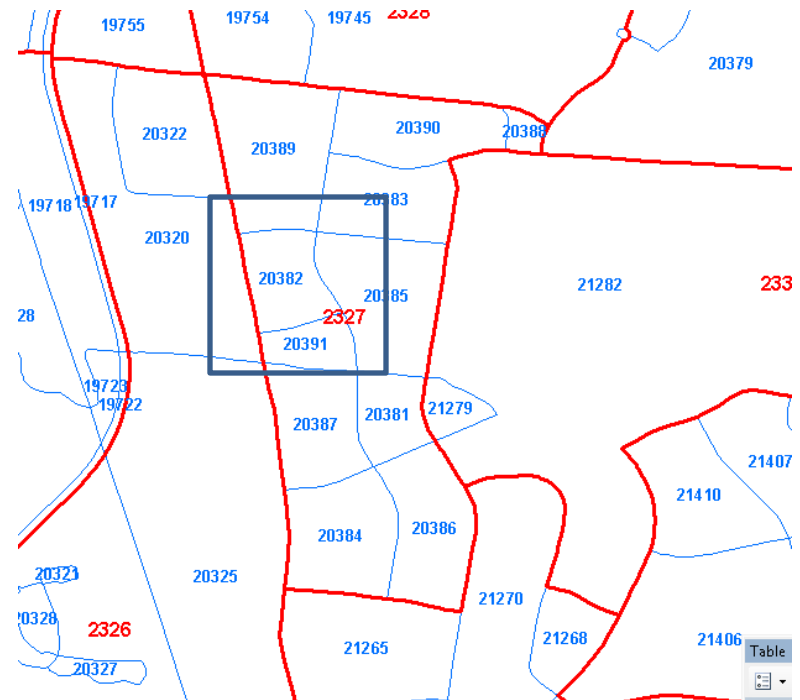
MAZ_ID = 20382

MAZ Data

hhno integer	zone_id integer	fraction_with_jobs_outside double precision	hhsize integer	hhvehs integer	hhwkrs integer	hhftw integer	hhptw integer	hhret integer	hhoad integer	hhuni integer	hhhsc integer	hh515 integer	hhcu5 integer	hhincome integer	hownrent integer	hrestype integer	hhparcel integer	hhtaz integer
545519	2326	0	2	2	1	0	1	1	0	0	0	0	0	69995	1	1	20381	2327
545520	2326	0	4	3	2	1	1	0	0	1	0	1	0	157837	1	1	20381	2327
545521	2326	0	2	2	2	1	1	0	0	0	0	0	0	166560	1	1	20382	2327
545522	2326	0	3	3	2	2	0	0	0	0	0	0	1	110555	2	1	20382	2327
545523	2326	0	3	1	2	2	0	0	0	0	0	1	0	107594	1	1	20382	2327
545524	2326	0	1	1	1	1	0	0	0	0	0	0	0	74052	1	1	20382	2327
545525	2326	0	4	2	1	1	0	0	1	0	0	1	1	56265	1	1	20382	2327
545526	2326	0	1	1	1	1	0	0	0	0	0	0	0	45900	1	3	20382	2327
545527	2326	0	5	3	1	1	0	0	1	0	2	1	0	332652	1	1	20382	2327
545528	2326	0	4	3	2	2	0	0	0	0	0	2	0	239372	1	1	20382	2327
545529	2326	0	2	2	0	0	0	2	0	0	0	0	0	70331	1	1	20382	2327
545530	2326	0	4	2	1	1	0	0	1	0	0	2	0	148065	1	1	20382	2327
545531	2326	0	2	2	1	0	1	1	0	0	0	0	0	20660	1	1	20382	2327
545532	2326	0	3	3	2	1	1	0	1	0	0	0	0	177678	1	1	20382	2327
545533	2326	0	3	1	1	1	0	0	0	0	0	2	0	38892	1	1	20382	2327
545534	2326	0	2	2	0	0	0	2	0	0	0	0	0	93556	1	1	20383	2327

MAZ_ID = 20382 has 13 households

HH_ID = 545527 has 5 persons, 1 household worker, 1 other adult, 1 full-time, 2 high-schools, 1 age 5-15, and 3 cars
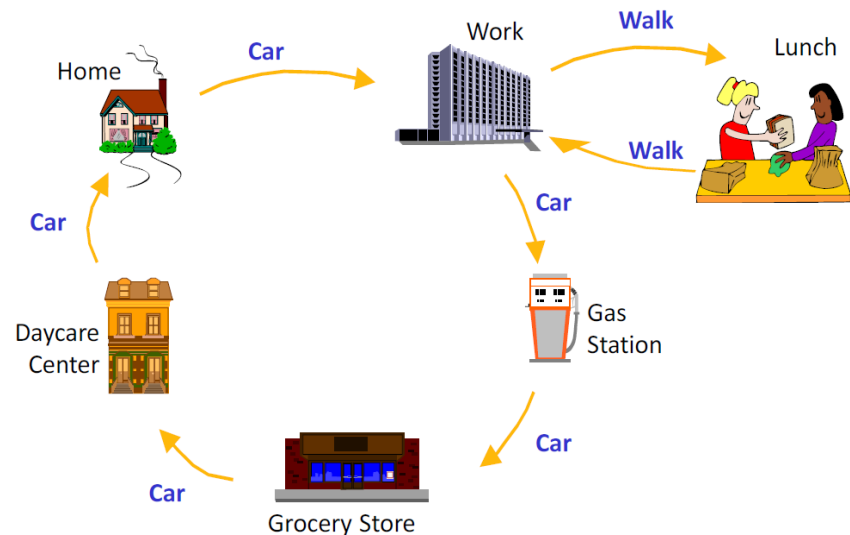
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Details Data

Person Data

ID	internal daysim record ID	1366856	1366857	1366858	1366859	1366860
HHNO	hh id	545527	545527	545527	545527	545527
PNO	person seq no on file	1	2	3	4	5
PPTYP	person type	1	4	6	6	7
PAGEY	age in years	49	48	16	16	13
PGEND						
PWTYP						
PWPCL						
PWTAZ						
PWAUTIME						
PWAUDIST						
PSTYP						
PSPCL						
PSTAZ						
PSAUTIME						
PSAUDIST						
PUWMODE						
PUWARRP						
PUWDEPP						
PTPASS						
PPAIDPRK						
PDIARY						
PPROXY						
PSEXPFAC						

Tour Data

ID	internal daysim record ID	13668601	13668581	13668572	13668571	13668562	13668561
PERSON_ID	internal daysim record ID	1366860	1366858	1366857	1366857	1366856	1366856
Person_day_ID	internal daysim record ID	1366860	1366858	1366857	1366857	1366856	1366856
HHNO	Household id	545527	545527	545527	545527	545527	545527
PNO	person seq no on file	5	3	2	2	1	1
DAY	Diary / simulation day ID	1	1	1	1	1	1
TOUR	tour id	1	1	2	1	2	1
JTINDEX	hh joint tour index	0	0	0	0	0	0
PAREN							
SUBTR							
PDPUF							
TLVOR							
TARDE							
TLVDE							
TAROF							
TOADT							
TDADT							
TOPCL							
TDPCL							
TOTAZ							
TDTAZ							
TMOD							
TPATH							
TAUTC							
TAUTC							
TAUTC							
TRIPSH							
TRIPSH							
PHTIN							
PHTIN							
FHTIN							
FHTIN							
TOEXP							

Trips Data

ID	internal daysim record ID	1366856101	13668561...		
TOUR_ID	internal daysim record ID	13668561	1366856...		
HHNO	Household id	545527	54552...		
PNO	person seq no on file	1			
DAY	Diary / simulation day ID	1	1	1	1
TOUR	tour id	1	1	2	2
HALF	tour half	1	2	1	2
TSEG	trip segment no within half tour	1	1	1	1
TSVID	original survey trip id no.	0	0	0	0
OPURP	trip origin purpose	0	1	0	6
DPURP	trip dest purpose	1	0	6	0
OADTYP	trip origin address type	1	2	1	4
DADTYP	trip destination address type	2	1	4	1
OPCL	trip origin parcel	20382	28676	20382	6401
OTAZ	trip origin zone	2327	1145	2327	1264
DPCL	trip dests parcel	28676	20382	6401	20382
DTAZ	trip dest zone	1145	2327	1264	2327
MODE	trip mode	3	3	4	4
PATHTYPE	transit submode	1	1	1	1
DORP	trip driver or passenger	1	1	1	2
DEPTM	trip departure time (min after 3 am)	492	868	1182	1250
ARRTM	trip arrival time (min after 3 am)	521	896	1190	1258
ENDACTTM	trip dest activity end time	1047	1361	1429	358
TRAVTIME	network travel time, min (by sov)	29.07	28.34	8.433346895	8.433346895
TRAVCOST	network travel time, min (by sov)	1.4892	1.4892	0.3190135	0.3190135
TRAVDIST	network travel distance, miles (by sov)	12.41	12.41	2.658445833	2.658445833
VOT	trip value of time (cents/minute)	50.69256829	50.69256829	40.02910927	40.02910927
TREXPFAC	trip expansion factor	1	1	1	1

0'none/home'
1'work'
2'school'
3'escort'
4'pers.bus'
5'shop'
6'meal'
7'social'
8'recreational' |c
9'medical' |curre
10'change mode'

@n

Model Results in Database

DB query to get detail of performance measures

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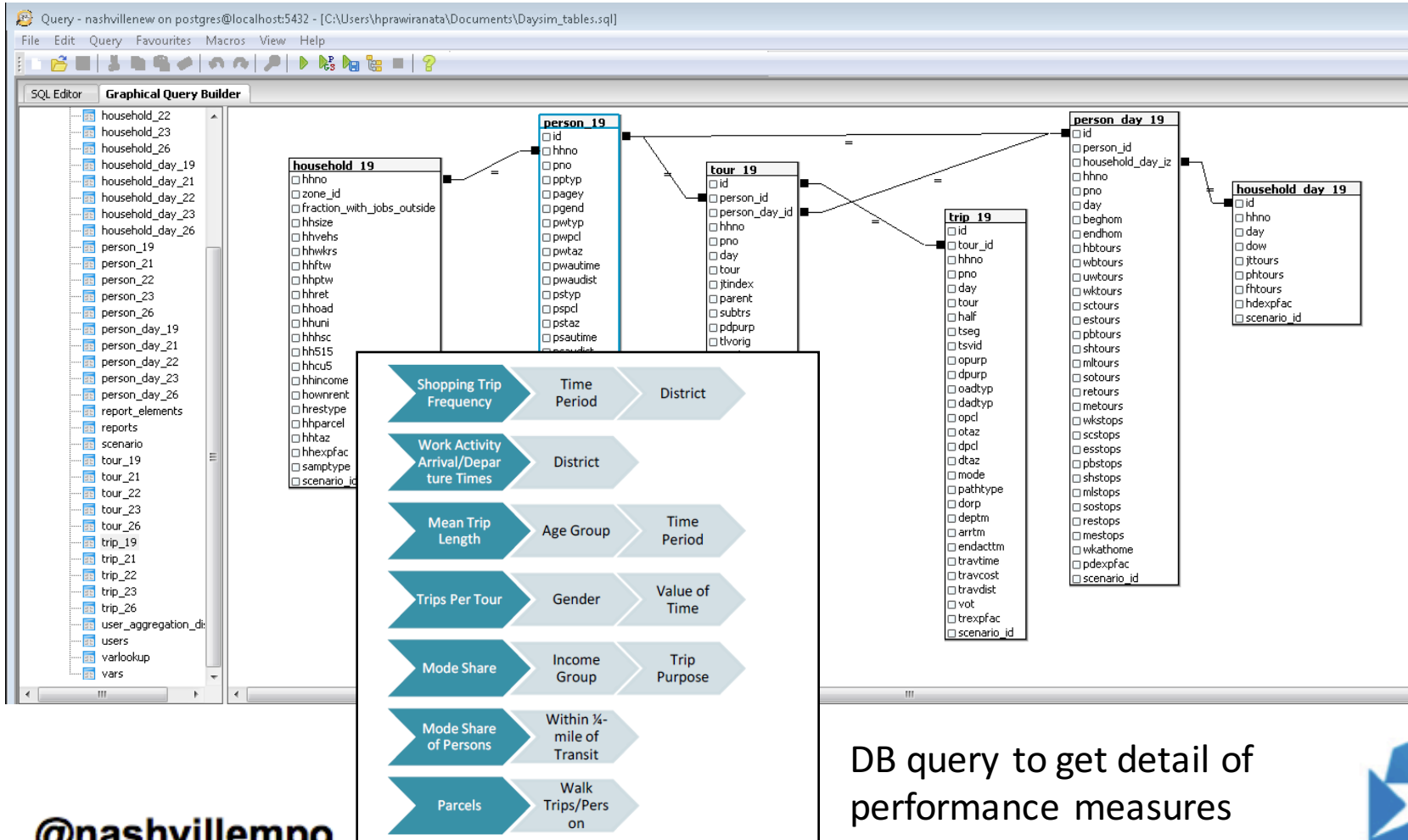
Daysim Visualization
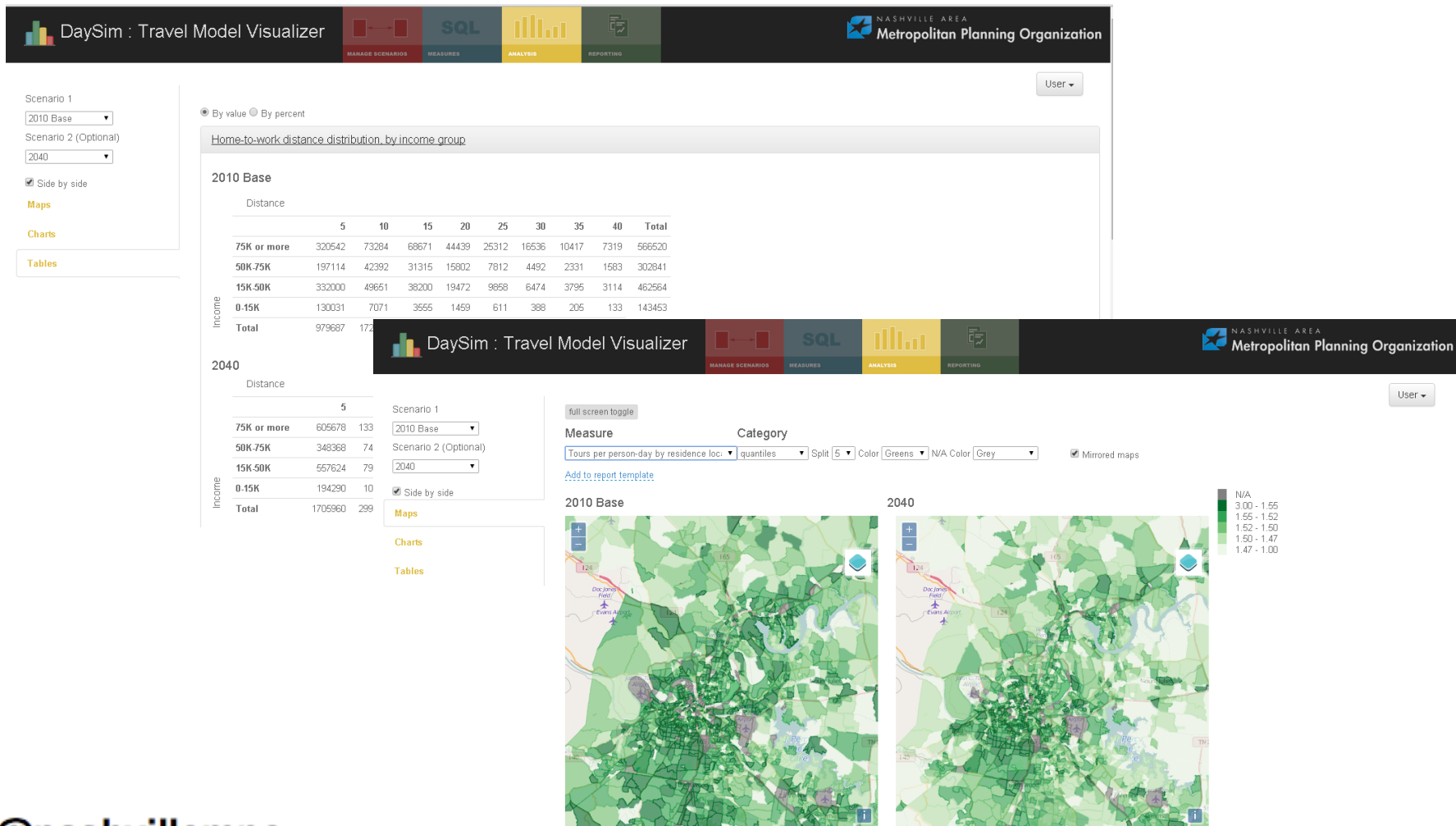
Current Status

- Calibrated
- Sensitivity tests made:
  - Transit
    - Headway
    - Free for students
  - Parking
    - Capacity
    - Fare
  - Truck restriction/Truck routes
  - Land-use change
- Other policies tests

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