



Lincoln MPO Travel Demand Model

TRIP GENERATION

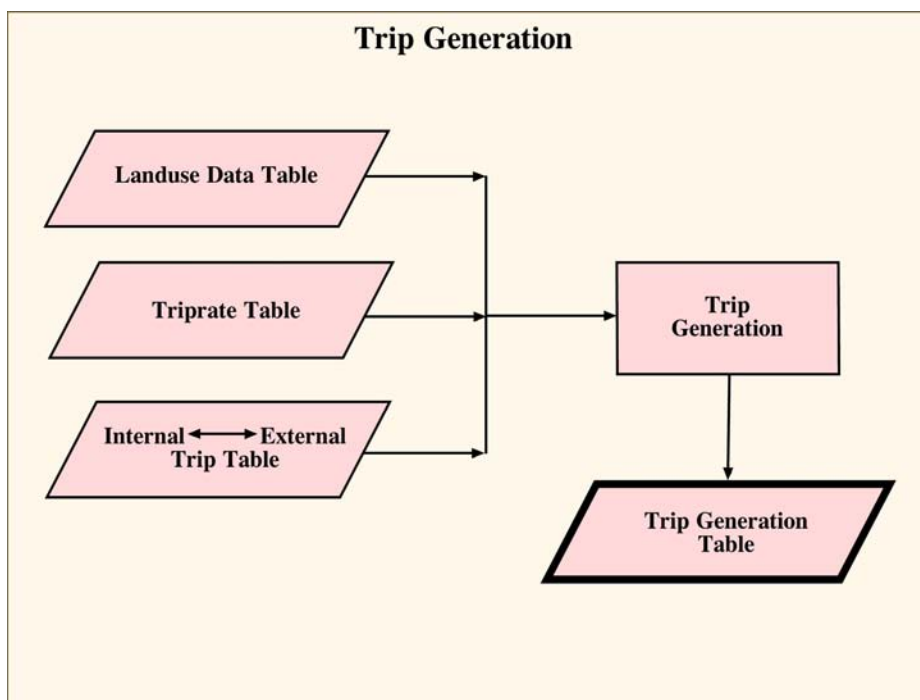
The trip generation process estimates the productions and attractions for each trip purpose. Lincoln MPO model has five trip purposes and are shown in Table 7.

TABLE 7. TRIP PURPOSES USED IN THE LINCOLN MODEL

TRIP PURPOSE	DESCRIPTION
Home Based Work	Work and work-related business
Home Based Shop	Shopping
Home Based Recreational	Vacation, visit friends or relatives, went out to eat, and other social/recreational
Home Based Other	Religious, medical/dental, personal, business, school, take someone or pick up someone, and other
Non Home Based	Any trips that start and end away from home

Trip generation process used in the Lincoln MPO model is shown in Figure 9. Land use data, trip rates by purpose for each land use and the number of internal-external trips are the main inputs for the trip generation process.

FIGURE 9. TRIP GENERATION PROCESS





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Land Use Data Table

The Lincoln MPO model has 12 land use categories. Table 8 shows the land use categories and their units.

TABLE 8. LAND USE CATEGORIES

LAND USE TYPE	UNITS
Multi Family	Dwelling Units
Single Family	Dwelling Units
General Retail	1000 SF
Shop Retail	1000 SF
Office	1000 SF
Service	1000 SF
Industrial	Acre
Park	Acre
Elementary	Student
Secondary	Student
College	Student
University	Student

The Lincoln MPO model area is also subdivided into 4 area types. Area type is used to identify different trip making characteristics. For example, trips produced by a rural household are higher than trips produced by an urban household. Also, the speeds on a freeway in urban areas are lower than in a rural setting. Two extra area types were added for this model update to account for special generators and any future reclassification needs. Table 9 shows the area types and the code assigned to each area type in the model.

TABLE 9. AREA TYPES

AREA TYPE	AREA TYPE CODE
Central Business District (CBD)	1
Urban	2
Suburban	3
Rural	4
Other (extra)	5
Other (extra)	6

The land use data table was created in a format required by TransCAD and populated with land use data for each combination of land use type and area type. This data is aggregated at the TAZ level. Previous TP+ model's land use information was used for this purpose. Based on the new TAZ structure and recommended changes by the City of Lincoln staff, that land use data was updated. Table 10 shows the land use data structure used in the Lincoln MPO model. Area type code is added as a suffix to each land use type i.e., a data field with the name MF1 in Table 10 indicates that the field has multifamily dwelling units data for the CBD area type.



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TABLE 10. LAND USE DATA TABLE STRUCTURE

FIELD NAME	DESCRIPTION	TYPE	REQUIRED
TAZ	TAZ NUMBER	Integer (4 bytes)	Yes
MF1	MULTI FAMILY 1	Integer (4 bytes)	Yes
MF2	MULTI FAMILY 2	Integer (4 bytes)	Yes
MF3	MULTI FAMILY 3	Integer (4 bytes)	Yes
MF4	MULTI FAMILY 4	Integer (4 bytes)	Yes
MF5	MULTI FAMILY 5	Integer (4 bytes)	Yes
MF6	MULTI FAMILY 6	Integer (4 bytes)	Yes
SF1	SINGLE FAMILY 1	Integer (4 bytes)	Yes
SF2	SINGLE FAMILY 2	Integer (4 bytes)	Yes
SF3	SINGLE FAMILY 3	Integer (4 bytes)	Yes
SF4	SINGLE FAMILY 4	Integer (4 bytes)	Yes
SF5	SINGLE FAMILY 5	Integer (4 bytes)	Yes
SF6	SINGLE FAMILY 6	Integer (4 bytes)	Yes
GenRet1	GEN-RETAIL 1	Integer (4 bytes)	Yes
GenRet2	GEN-RETAIL 2	Integer (4 bytes)	Yes
GenRet3	GEN-RETAIL 3	Integer (4 bytes)	Yes
GenRet4	GEN-RETAIL 4	Integer (4 bytes)	Yes
SG Retail	Special Generator Retail	Integer (4 bytes)	Yes
SGMedCen	Special Generator – Medical Center	Integer (4 bytes)	Yes
ShopRet1	SHOP-RETAIL 1	Integer (4 bytes)	Yes
ShopRet2	SHOP-RETAIL 2	Integer (4 bytes)	Yes
ShopRet3	SHOP-RETAIL 3	Integer (4 bytes)	Yes
ShopRet4	SHOP-RETAIL 4	Integer (4 bytes)	Yes
ShopRet5	SHOP-RETAIL 5	Integer (4 bytes)	Yes
SGMall	Special Generator – Mall	Integer (4 bytes)	Yes
Office1	OFFICE 1	Integer (4 bytes)	Yes
Office2	OFFICE 2	Integer (4 bytes)	Yes
Office3	OFFICE 3	Integer (4 bytes)	Yes
Office4	OFFICE 4	Integer (4 bytes)	Yes
SGPrison	Special Generator - Prison	Integer (4 bytes)	Yes
SGOffice	Special Generator - Office	Integer (4 bytes)	Yes
Service1	SERVICE 1	Integer (4 bytes)	Yes
Service2	SERVICE 2	Integer (4 bytes)	Yes
Service3	SERVICE 3	Integer (4 bytes)	Yes
Service4	SERVICE 4	Integer (4 bytes)	Yes
SGAirport	Special Generator – Airport	Integer (4 bytes)	Yes
SGService	Special Generator – Service	Integer (4 bytes)	Yes

FIELD NAME	DESCRIPTION	TYPE	REQUIRED
Ind1	INDUSTRIAL 1	Integer (4 bytes)	Yes
Ind2	INDUSTRIAL 2	Integer (4 bytes)	Yes
Ind3	INDUSTRIAL 3	Integer (4 bytes)	Yes
Ind4	INDUSTRIAL 4	Integer (4 bytes)	Yes
Ind5	INDUSTRIAL 5	Integer (4 bytes)	Yes
SGHvyInd	Special Generator – Heavy Industrial	Integer (4 bytes)	Yes
Park1	PARK 1	Integer (4 bytes)	Yes
Park2	PARK 2	Integer (4 bytes)	Yes
Park3	PARK 3	Integer (4 bytes)	Yes
Park4	PARK 4	Integer (4 bytes)	Yes
Park5	PARK 5	Integer (4 bytes)	Yes
Park6	PARK 6	Integer (4 bytes)	Yes
ElemSch1	ELEMENTARY 1	Integer (4 bytes)	Yes
ElemSch2	ELEMENTARY 2	Integer (4 bytes)	Yes
ElemSch3	ELEMENTARY 3	Integer (4 bytes)	Yes
ElemSch4	ELEMENTARY 4	Integer (4 bytes)	Yes
ElemSch5	ELEMENTARY 5	Integer (4 bytes)	Yes
ElemSch6	ELEMENTARY 6	Integer (4 bytes)	Yes
SecSch1	SECONDARY 1	Integer (4 bytes)	Yes
SecSch2	SECONDARY 2	Integer (4 bytes)	Yes
SecSch3	SECONDARY 3	Integer (4 bytes)	Yes
SecSch4	SECONDARY 4	Integer (4 bytes)	Yes
SecSch5	SECONDARY 5	Integer (4 bytes)	Yes
SecSch6	SECONDARY 6	Integer (4 bytes)	Yes
ComCol1	COLLEGE 1	Integer (4 bytes)	Yes
ComCol2	COLLEGE 2	Integer (4 bytes)	Yes
ComCol3	COLLEGE 3	Integer (4 bytes)	Yes
ComCol4	COLLEGE 4	Integer (4 bytes)	Yes
ComCol5	COLLEGE 5	Integer (4 bytes)	Yes
ComCol6	COLLEGE 6	Integer (4 bytes)	Yes
UofN1	UNIVERSITY 1	Integer (4 bytes)	Yes
UofN2	UNIVERSITY 2	Integer (4 bytes)	Yes
UofN3	UNIVERSITY 3	Integer (4 bytes)	Yes
UofN4	UNIVERSITY 4	Integer (4 bytes)	Yes
UofN5	UNIVERSITY 5	Integer (4 bytes)	Yes
SGUnivMain	Special Generator – Univ Main Camp	Integer (4 bytes)	Yes

Special Generators

Special generators are those land uses that do not generate or attract trips at the same rate as other land uses in the same land use category; hence they are assigned a unique trip rate. There are nine special generators in the Lincoln MPO model. Table 11 lists all the special generators



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and the TAZs in which they are located. The table also specifies the field names in the land use data table that correspond to these special generators.

TABLE 11. SPECIAL GENERATORS

Special Generator	Units	TAZ (s)	Corresponding Land Use Data Field Name
Airport	Employees	141	SGAirport
Prison	Employees	407, 161	SGPrison
Mall	1000 SF	47, 246	SGMall
Medical Center	Employees	160	SGMedCent
University Main Campus	Students	23	SGUnivMain
Heavy Industrial	Acres	119, 121, 139, 239	SGHvyInd
Low Retail	1000 SF	147,148,149	SGRetail
Low Office	1000 SF	47,147,148,149	SGOffice
Low Service	1000 SF	147,148	SGService

Trip Rate Table

Trip productions for internal residential trips are estimated using a daily trip rate per dwelling unit. Trip attractions for the internal non-residential land uses are estimated using a trip rate per unit (square feet, students, employees, etc.). Trip rates vary depending on the type of land use generating the trips. For example, trip rates for commercial land use type are much higher than parks because commercial establishments attract a lot more trips.

Non-Residential Trip Rates

Non-residential trip rates from the previous TP+ model (based on ITE trips rates) were used as a base for the Lincoln MPO model. These rates were revised using “ITE Trip Generation, 7th Edition”. These trip rates were further refined based on the four area types used in the Lincoln MPO model.

Residential Trip Rates

Residential trip rates in the Lincoln MPO model were developed after reviewing trip rates from the 2001 National Highway Travel Survey for Des Moines, MAPA Omaha Council Bluffs, and Mid-America Regional Council (MARC). Additionally, the trip rate for the rural area was developed using Lancaster county survey. For other detailed information please visit the NHTS web site at <http://nhts.ornl.gov/2001/index.shtml>

Table 12 presents the daily trip rates used in the Lincoln MPO model for each land use and area type combination for each trip purpose. This table includes the trip rates for the special generators.

Table 13 shows the trip rate table structure as required by TransCAD.



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TABLE 12. LAND USE TRIP RATES

LAND USE	UNITS	TRIP RATE	PRODUCTION RATES					ATTRACTION RATES				
			HBW	HBS	HBR	HBO	NHB	HBW	HBS	HBR	HBO	NHB
MULTI FAMILY 1	DU	8.050	0.886	2.069	0.902	1.161	3.035	0.000	0.000	0.000	0.000	0.000
MULTI FAMILY 2	DU	11.730	1.525	2.628	1.372	1.926	4.281	0.000	0.000	0.000	0.000	0.000
MULTI FAMILY 3	DU	12.110	1.635	2.810	1.432	2.119	4.130	0.000	0.000	0.000	0.000	0.000
MULTI FAMILY 4	DU	12.010	1.681	3.063	1.501	2.018	3.735	0.000	0.000	0.000	0.000	0.000
MULTI FAMILY 5	DU	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MULTI FAMILY 6	DU	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SINGLE FAMILY 1	DU	10.840	1.192	2.168	1.084	2.461	3.957	0.000	0.000	0.000	0.000	0.000
SINGLE FAMILY 2	DU	13.080	1.449	2.289	1.530	3.309	4.552	0.000	0.000	0.000	0.000	0.000
SINGLE FAMILY 3	DU	13.580	1.901	2.390	1.507	3.381	4.414	0.000	0.000	0.000	0.000	0.000
SINGLE FAMILY 4	DU	18.080	2.531	3.272	2.389	4.484	5.456	0.000	0.000	0.000	0.000	0.000
SINGLE FAMILY 5	DU	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SINGLE FAMILY 6	DU	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GEN-RETAIL 1	SQF	55.23	0.000	0.000	0.000	0.000	0.000	2.044	28.885	10.494	3.866	9.941
GEN-RETAIL 2	SQF	68.000	0.000	0.000	0.000	0.000	0.000	3.264	34.000	14.434	5.440	10.880
GEN-RETAIL 3	SQF	65.610	0.000	0.000	0.000	0.000	0.000	3.609	29.787	14.500	6.561	11.154
GEN-RETAIL 4	SQF	50.000	0.000	0.000	0.000	0.000	0.000	2.500	19.550	12.631	5.800	9.500
SGRETAIL	SQF	30.000	0.000	0.000	0.000	0.000	0.000	1.500	11.730	7.578	3.480	5.700
MEDICAL CENTER	SQF	4.430	0.000	0.000	0.000	0.000	0.000	2.658	0.000	0.000	0.443	1.329
SHOP-RETAIL 1	SQF	30.000	0.000	0.000	0.000	0.000	0.000	1.650	13.050	7.350	3.150	4.799
SHOP-RETAIL 2	SQF	45.000	0.000	0.000	0.000	0.000	0.000	3.060	18.540	11.025	4.725	7.650
SHOP-RETAIL 3	SQF	50.000	0.000	0.000	0.000	0.000	0.000	3.500	20.000	12.250	5.250	9.000
SHOP-RETAIL 4	SQF	30.000	0.000	0.000	0.000	0.000	0.000	2.430	11.070	7.350	3.150	6.000
SHOP-RETAIL 5	SQF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MALL	SQF	35.000	0.000	0.000	0.000	0.000	0.000	2.450	10.500	8.575	3.675	9.800
OFFICE 1	SQF	11.500	0.000	0.000	0.000	0.000	0.000	2.300	0.000	0.000	2.292	6.912
OFFICE 2	SQF	18.300	0.000	0.000	0.000	0.000	0.000	3.160	0.000	0.000	4.544	10.591
OFFICE 3	SQF	20.000	0.000	0.000	0.000	0.000	0.000	2.654	0.000	0.000	6.582	10.760
OFFICE 4	SQF	16.500	0.000	0.000	0.000	0.000	0.000	2.677	0.000	0.000	5.433	8.394
PRISON	SQF	3.560	0.000	0.000	0.000	0.000	0.000	2.136	0.000	0.000	0.356	1.068
SGOFFICE	SQF	10.000	0.000	0.000	0.000	0.000	0.000	1.623	0.000	0.000	3.293	5.087
SERVICE 1	SQF	16.500	0.000	0.000	0.000	0.000	0.000	2.596	0.000	0.000	7.302	6.602
SERVICE 2	SQF	19.930	0.000	0.000	0.000	0.000	0.000	3.288	0.000	0.000	8.871	7.773
SERVICE 3	SQF	25.000	0.000	0.000	0.000	0.000	0.000	4.375	0.000	0.000	11.525	9.108
SERVICE 4	SQF	22.690	0.000	0.000	0.000	0.000	0.000	3.543	0.000	0.000	10.359	8.743
AIRPORT	SQF	40.600	0.000	0.000	0.000	0.000	0.000	6.090	0.000	28.420	0.000	6.090
SGSERVICE	SQF	10.500	0.000	0.000	0.000	0.000	0.000	1.639	0.000	0.000	4.810	4.046



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TABLE 12. LAND USE TRIP RATES (CONTINUED)

LAND USE	UNITS	TRIP RATE	PRODUCTION RATES					ATTRACTION RATES				
			HBW	HBS	HBR	HBO	NHB	HBW	HBS	HBR	HBO	NHB
INDUSTRIAL 1	ACRE	32.500	0.000	0.000	0.000	0.000	0.000	24.380	0.000	0.000	0.000	8.127
INDUSTRIAL 2	ACRE	32.500	0.000	0.000	0.000	0.000	0.000	24.380	0.000	0.000	0.000	8.127
INDUSTRIAL 3	ACRE	25.500	0.000	0.000	0.000	0.000	0.000	19.125	0.000	0.000	0.000	6.375
INDUSTRIAL 4	ACRE	20.000	0.000	0.000	0.000	0.000	0.000	15.000	0.000	0.000	0.000	5.000
INDUSTRIAL 5	ACRE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HEAVY INDUSTRIAL	ACRE	20.000	0.000	0.000	0.000	0.000	0.000	18.750	0.000	0.000	0.000	6.250
PARK 1	ACRE	2.500	0.000	0.000	0.000	0.000	0.000	0.126	0.000	2.248	0.000	0.126
PARK 2	ACRE	2.500	0.000	0.000	0.000	0.000	0.000	0.126	0.000	2.248	0.000	0.126
PARK 3	ACRE	2.500	0.000	0.000	0.000	0.000	0.000	0.126	0.000	2.248	0.000	0.126
PARK 4	ACRE	2.500	0.000	0.000	0.000	0.000	0.000	0.126	0.000	2.248	0.000	0.126
PARK 5	ACRE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PARK 6	ACRE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ELEMENTARY 1	STUDENT	1.820	0.000	0.000	0.000	0.000	0.000	0.178	0.000	0.000	0.732	0.910
ELEMENTARY 2	STUDENT	1.820	0.000	0.000	0.000	0.000	0.000	0.178	0.000	0.000	0.732	0.910
ELEMENTARY 3	STUDENT	1.820	0.000	0.000	0.000	0.000	0.000	0.178	0.000	0.000	0.732	0.910
ELEMENTARY 4	STUDENT	1.820	0.000	0.000	0.000	0.000	0.000	0.178	0.000	0.000	0.732	0.910
ELEMENTARY 5	STUDENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ELEMENTARY 6	STUDENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SECONDARY 1	STUDENT	2.600	0.000	0.000	0.000	0.000	0.000	0.257	0.000	0.000	1.043	1.300
SECONDARY 2	STUDENT	2.600	0.000	0.000	0.000	0.000	0.000	0.257	0.000	0.000	1.043	1.300
SECONDARY 3	STUDENT	2.600	0.000	0.000	0.000	0.000	0.000	0.257	0.000	0.000	1.043	1.300
SECONDARY 4	STUDENT	2.600	0.000	0.000	0.000	0.000	0.000	0.257	0.000	0.000	1.043	1.300
SECONDARY 5	STUDENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SECONDARY 6	STUDENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COLLEGE 1	STUDENT	2.300	0.000	0.000	0.000	0.000	0.000	0.224	0.000	0.000	0.741	0.920
COLLEGE 2	STUDENT	2.300	0.000	0.000	0.000	0.000	0.000	0.224	0.000	0.000	0.741	0.920
COLLEGE 3	STUDENT	2.300	0.000	0.000	0.000	0.000	0.000	0.224	0.000	0.000	0.741	0.920
COLLEGE 4	STUDENT	2.300	0.000	0.000	0.000	0.000	0.000	0.224	0.000	0.000	0.741	0.920
COLLEGE 5	STUDENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COLLEGE 6	STUDENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
UNIVERSITY 1	STUDENT	3.500	0.000	0.000	0.000	0.000	0.000	0.350	0.000	0.000	1.365	1.785
UNIVERSITY 2	STUDENT	4.500	0.000	0.000	0.000	0.000	0.000	0.450	0.000	0.000	1.755	2.295
UNIVERSITY 3	STUDENT	3.500	0.000	0.000	0.000	0.000	0.000	0.256	0.000	0.000	1.365	1.785
UNIVERSITY 4	STUDENT	2.500	0.000	0.000	0.000	0.000	0.000	0.256	0.000	0.000	0.975	1.275
UNIVERSITY 5	STUDENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
UNIV MAIN CAMPUS	STUDENT	3.650	0.000	0.000	0.000	0.000	0.000	0.365	0.000	0.000	1.424	1.862



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TABLE 13. TRIP RATE TABLE STRUCTURE

	FIELD NAME	DESCRIPTION	TYPE	REQUIRED
User Populated Fields	MODEL_ID	Landuse ID	Integer (2 bytes)	Yes
	LANDUSE	Landuse description	Character	Yes
	UNITS	Landuse units	Character	Yes
	RATE	Daily trip rate	Real (4 bytes)	Yes
	PR_HBWP	Percentage of HBW Productions	Real (4 bytes)	Yes
	PR_HBSP	Percentage of HBS Productions	Real (4 bytes)	Yes
	PR_HBRP	Percentage of HBR Productions	Real (4 bytes)	Yes
	PR_HBOP	Percentage of HBO Productions	Real (4 bytes)	Yes
	PR_NHBP	Percentage of NHB Productions	Real (4 bytes)	Yes
	PR_HBWA	Percentage of HBW Attractions	Real (4 bytes)	Yes
	PR_HBSA	Percentage of HBS Attractions	Real (4 bytes)	Yes
	PR_HBRA	Percentage of HBR Attractions	Real (4 bytes)	Yes
	PR_HBOA	Percentage of HBO Attractions	Real (4 bytes)	Yes
	PR_NHBA	Percentage of NHB Attractions	Real (4 bytes)	Yes
Automatically Filled Fields	R_HBWP	HBW productions triprate	Real (4 bytes)	Yes
	R_HBSP	HBS productions triprate	Real (4 bytes)	Yes
	R_HBRP	HBR productions triprate	Real (4 bytes)	Yes
	R_HBOP	HBO productions triprate	Real (4 bytes)	Yes
	R_NHBP	NHB productions triprate	Real (4 bytes)	Yes
	R_HBWA	HBW attractions triprate	Real (4 bytes)	Yes
	R_HBSA	HBS attractions triprate	Real (4 bytes)	Yes
	R_HBRA	HBR attractions triprate	Real (4 bytes)	Yes
	R_HBOA	HBO attractions triprate	Real (4 bytes)	Yes
	R_NHBA	NHB attractions triprate	Real (4 bytes)	Yes

Internal – External Trip Table

As mentioned earlier, the trip generation process estimates the total number of production and attraction trips. Some of these trips are a result of the interaction between the external and internal zones. Internal – External trip table summarizes the number of trips that come into the study area from external zones and the number of trips that go out to the external zones from the study area.

The Lincoln MPO model contains 32 external zones, 7 more than the previous model. Total daily volume on each external zone was split into two categories –

- External to External trips (EE) – these trips do not stop in the model area
- Internal to External trips (IE) & External to Internal trips (EI)



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Percentages of EE and IE-EI trips for each external zone were obtained from the previous model. For the newly added external zones, City of Lincoln staff provided the percentage information. Year 2004 count were used at each external station.

Table 14 presents the EE, and EI-IE trip distribution used in the Lincoln MPO model.

TABLE 14. EE & IE-EI TRIPS AT EXTERNAL ZONES

EXTERNAL STATION	LOCATION	2004 ADT	EE TRIPS	IE & EI TRIPS
528	Bennet	500	0	500
529	Hwywood/Bluff Rd	300	0	300
530	56th North - SS79	3585	287	3298
531	27th North	245	0	245
532	14th North	3030	106	2924
533	US 77- 56th North	8125	2356	5769
534	98th North	575	0	575
535	148th North	760	0	760
536	HWY 6 East	5365	574	4791
537	I-80 East	36165	19746	16419
538	Fletcher	470	0	470
539	Adams East	490	0	490
540	US 34 - O Street East	6735	1616	5119
541	Van Dorn East	370	0	370
542	Old Cheney East	540	0	540
543	N2 - Rokeby East	12595	3564	9031
544	120th South	365	0	365
545	82th South	220	0	220
546	68th South	6140	669	5471
547	46th South	660	0	660
548	Homestead Expy - US 77 South	14885	3825	11060
549	14th South	290	0	290
550	42th South	180	0	180
551	72th South	185	13	172
552	Kolbrook	210	15	195
553	Denton West	3000	216	2784
554	Van Dorn West	830	0	830
555	O Street West- HWY 6	3100	471	2629
556	I-80 West	31730	19324	12406
557	Adams West	1000	0	1000
558	Hwy 34 West	4520	1220	3300
559	State Spur 55-M	1575	425	1150
560	Waverly	385	0	385

EI & IE trips are populated in a table formatted to TransCAD requirements and the table structure is shown in Table 15.



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TABLE 15. IE & EI TRIP TABLE STRUCTURE

FIELD NAME	DESCRIPTION	TYPE	REQUIRED
TAZ	TAZ number	Integer (4 bytes)	Yes
IEHBWP	HBW - Internal - External trips productions	Integer (4 bytes)	Yes
IEHBWA	HBW - Internal - External trips attractions	Integer (4 bytes)	Yes
IEHBSP	HBS - Internal - External trips productions	Integer (4 bytes)	Yes
IEHBSA	HBS - Internal - External trips attractions	Integer (4 bytes)	Yes
IEHBRP	HBR - Internal - External trips productions	Integer (4 bytes)	Yes
IEHBRA	HBR - Internal - External trips attractions	Integer (4 bytes)	Yes
IEHBOP	HBO - Internal - External trips productions	Integer (4 bytes)	Yes
IEHBOA	HBO - Internal - External trips attractions	Integer (4 bytes)	Yes
IENHBP	NHB - Internal - External trips productions	Integer (4 bytes)	Yes
IENHBA	NHB - Internal - External trips attractions	Integer (4 bytes)	Yes

Trip Generation Table

The Lincoln MPO model interface is used to run the trip generation process using the land use data, trip rate data, and internal-external trips data. Trip productions and attractions are balanced automatically as part of this process. The output trip generation table will have the total productions and attractions for each trip purpose for each TAZ.

Total trips generated in this step are person trips and not vehicle/auto trips. Mode choice step of the Lincoln MPO model separates the auto trips from the non-auto trips. It is for this reason that the trip generation process estimates the total person trips. Table 16 lists the total number of trips generated by each trip purpose for the base year 2004. A comparison of the Lincoln MPO model trip percentages by purpose against the National Household Travel Survey results for “West-North-Central” zone validates the trip generation results of the model.

TABLE 16. TOTAL TRIPS BY PURPOSE FOR BASE YEAR 2004

Trip Purpose	Lincoln MPO	Percentage of Trips - Lincoln MPO	Percentage of Trips - West North Central*
Home-based Work	204,025	13.8%	10.9%
Home-based Shopping	302,640	20.5%	21.8%
Home-based Social/Recreational	168,871	11.4%	13.8%
Other Home-based	343,006	23.2%	20.5%
Not Home-based	459,816	31.1%	33.0%
TOTAL	1,478,358	100.0%	100.0%

*Source: National Household Travel Survey(2001), U.S. Department of Transportation, Bureau of Transportation Statistics