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## **Appendix H. Trip Generation**

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**Table 1. Transit Villages Specific Plan Trip Generation**

<b>Land Use</b>	<b>Daily</b>	<b>AM Peak Hour</b>			<b>PM Peak Hour</b>		
		<b>In</b>	<b>Out</b>	<b>Total</b>	<b>In</b>	<b>Out</b>	<b>Total</b>
<b>Downtown Area</b>							
State Street Village	5,409	494	308	800	235	242	474
The Grand Apartments	704	17	41	57	55	37	91
City Center Mixed-Use	948	28	45	72	57	41	98
Future Projects	3,188	117	90	206	130	138	266
<b>Total Downtown Village</b>	<b>10,249</b>	<b>656</b>	<b>484</b>	<b>1,135</b>	<b>477</b>	<b>458</b>	<b>929</b>
<b>University Village</b>							
University's and Future Projects	6,003	306	90	394	197	276	472
<b>New York Street Village</b>							
Future Projects	3,236	278	92	367	136	281	414
<b>Total Transit Villages Specific Plan Trip Generation</b>	<b>19,487</b>	<b>1,240</b>	<b>666</b>	<b>1,896</b>	<b>810</b>	<b>1,015</b>	<b>1,816</b>

**Table 2. State Street Village Trip Generation**

Land Use	Units	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
<b>Proposed Project Trip Rate</b>								
Multifamily Housing (Mid-Rise) <sup>1</sup>	DU	4.75	0.18	0.14	0.32	0.12	0.17	0.29
Shopping Plaza without Supermarket <sup>2</sup>	TSF	67.52	1.07	0.66	1.73	2.54	2.65	5.19
Pharmacy/Drugstore with Drive-Through Window <sup>3</sup>	TSF	108.40	1.94	1.80	3.74	5.13	5.13	10.25
Fine Dining Restaurant <sup>4</sup>	TSF	83.84	0.40	0.33	0.73	5.23	2.57	7.80
High-Turnover (Sit-Down Restaurant) <sup>5</sup>	TSF	107.20	5.26	4.31	9.57	5.52	3.53	9.05
Fast-Food Restaurant without Drive-Through Window <sup>6</sup>	TSF	450.49	25.04	18.14	43.18	16.61	16.61	33.21
Office <sup>7</sup>	TSF	10.84	1.34	0.18	1.52	0.24	1.20	1.44
<b>Proposed Project Trip Generation</b>								
Multifamily Housing (Mid-Rise)	723 DU	3,435	130	102	232	91	120	210
Internal Capture <sup>8</sup> :		(1,104)	(10)	(22)	(32)	(57)	(44)	(101)
Residential Subtotal		2,331	120	80	200	34	76	109
Shopping Plaza without Supermarket	39,000 TSF	2,634	42	26	68	100	104	203
Internal Capture <sup>8</sup> :		(971)	(5)	(5)	(10)	(62)	(55)	(117)
Pass-By (34% PM/Daily) <sup>9</sup> :		(1,226)	-	-	-	(15)	(15)	(29)
Pharmacy/Drugstore with Drive-Through window	14,500 TSF	1,572	29	27	55	75	75	149
Internal Capture <sup>8</sup> :		(579)	(3)	(6)	(9)	(47)	(40)	(87)
Pass-By (49% PM/Daily) <sup>9</sup> :		(1,054)	-	-	-	(15)	(15)	(31)
Retail Subtotal		377	63	42	104	36	54	88
Fine Dining Restaurant	2,200 TSF	185	1	1	2	12	6	18
Internal Capture <sup>8</sup> :		(29)	(0)	(0)	(0)	(3)	(2)	(4)
Pass-By (41% PM/Daily) <sup>9</sup> :		(88)	-	-	-	(3)	(3)	(6)
High-Turnover (Sit-Down) Restaurant	16,000 TSF	1,716	85	69	154	89	57	145
Internal Capture <sup>8</sup> :		(269)	(5)	(3)	(8)	(19)	(18)	(37)
Pass-By (43% PM/Daily) <sup>9</sup> :		(854)	-	-	-	(23)	(23)	(46)
Fast-Food Restaurant without Drive-Through Window	16,000 TSF	7,208	401	291	691	266	266	532
Internal Capture <sup>8</sup> :		(1,131)	(23)	(12)	(35)	(57)	(84)	(141)
Pass-By (49% AM; 50% PM/Daily) <sup>9</sup> :		(4,170)	(161)	(161)	(321)	(98)	(98)	(196)
Restaurant Subtotal		2,569	298	185	483	165	101	265
Office	12,222 TSF	133	17	3	19	3	15	18
Internal Capture <sup>8</sup> :			(4)	(2)	(6)	(3)	(4)	(7)
Office Subtotal		133	13	1	13	-	11	11
<b>Total Net Trip Generation</b>		<b>5,409</b>	<b>494</b>	<b>308</b>	<b>800</b>	<b>235</b>	<b>242</b>	<b>474</b>

TSF = Thousand Square Feet

<sup>1</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 221 - Multifamily Housing (Mid-Rise, between 4 and 10 floors). Rates are used for projects close to rail transit.

<sup>2</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 821 - Shopping Plaza (40-150k) without Supermarket.

<sup>3</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 881 Pharmacy/Drugstore with Drive-Through Window.

<sup>4</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 931 - Fine Dining Restaurant. There is no directional distribution for AM peak hour, therefore the directional distribution from ITE 932 - High-Turnover (Sit-Down) Restaurant was used.

<sup>5</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 932 - High-Turnover (Sit-Down) Restaurant.

<sup>6</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 933 - Fast-Food Restaurant without Drive-Through Window.

<sup>7</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 710 - General Office Building.

<sup>8</sup> Internal capture calculated using the NCHRP 684 Internal Trip Capture Estimation Tool.

<sup>9</sup> Pass-by percentages from the ITE Trip Generation Handbook, 3rd Edition (2017).

**Table 3. The Grand Apartments Trip Generation**

<b>Land Use</b>	<b>Units</b>	<b>Daily</b>	<b>AM Peak Hour</b>			<b>PM Peak Hour</b>			
			<b>In</b>	<b>Out</b>	<b>Total</b>	<b>In</b>	<b>Out</b>	<b>Total</b>	
<b><u>Proposed Project Trip Rate</u></b>									
Multifamily Housing (Low-Rise) <sup>1</sup>	DU	4.72	0.11	0.27	0.38	0.37	0.24	0.61	
<b><u>Proposed Project Trip Generation</u></b>									
Multifamily Housing (Low-Rise)	149	DU	704	17	41	57	55	37	91
<b>Total Trip Generation</b>			<b>704</b>	<b>17</b>	<b>41</b>	<b>57</b>	<b>55</b>	<b>37</b>	<b>91</b>

TSF = Thousand Square Feet

<sup>1</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 221 - Multifamily Housing (Low-Rise, less than 3 floors). Rates are used for projects close to rail transit.

**Table 4. City Center Mixed-Use Trip Generation**

Land Use	Units	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
<b>Proposed Project Trip Rate</b>								
Multifamily Housing (Low-Rise) <sup>1</sup>	DU	4.72	0.11	0.27	0.38	0.37	0.24	0.61
Shopping Plaza without Supermarket <sup>2</sup>	TSF	67.52	1.07	0.66	1.73	2.54	2.65	5.19
<b>Proposed Project Trip Generation</b>								
Multifamily Housing (Low-Rise)	138 DU	652	16	38	53	51	34	85
Internal Capture <sup>3</sup> :		(83)	-	-	-	(9)	(5)	(14)
Shopping Plaza without Supermarket	10,430 TSF	705	12	7	19	27	28	55
Internal Capture <sup>4</sup> :		(64)	-	-	-	(5)	(9)	(14)
Pass-By (34% PM/Daily) <sup>9</sup> :		(261)	-	-	-	(7)	(7)	(14)
<b>Total Net Trip Generation</b>		<b>948</b>	<b>28</b>	<b>45</b>	<b>72</b>	<b>57</b>	<b>41</b>	<b>98</b>

TSF = Thousand Square Feet

<sup>1</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 221 - Multifamily Housing (Low-Rise, less than 3 floors). Rates are used for projects close to rail transit.

<sup>2</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 821 - Shopping Plaza (40-150k) without Supermarket.

<sup>3</sup> Internal capture calculated using the NCHRP 684 Internal Trip Capture Estimation Tool.

<sup>4</sup> Pass-by percentages from the ITE Trip Generation Handbook, 3rd Edition (2017).

**Table 5. Downtown Village Future Projects Trip Generation**

Land Use	Units	Daily	AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
<b>Proposed Project Trip Rate</b>									
Multifamily Housing (Low-Rise) <sup>1</sup>	DU	4.72	0.11	0.27	0.38	0.37	0.24	0.61	
Shopping Plaza without Supermarket <sup>2</sup>	TSF	67.52	1.07	0.66	1.73	2.54	2.65	5.19	
Office <sup>3</sup>	TSF	10.84	1.34	0.18	1.52	0.24	1.20	1.44	
<b>Proposed Project Trip Generation</b>									
Multifamily Housing (Low-Rise)	163	DU	770	18	44	62	60	40	100
		Internal Capture <sup>4</sup> :	(189)	-	(1)	(1)	(29)	(19)	(48)
		<i>Residential Subtotal</i>	<i>581</i>	<i>18</i>	<i>43</i>	<i>61</i>	<i>31</i>	<i>21</i>	<i>52</i>
Shopping Plaza without Supermarket	66.070	TSF	4,462	71	44	115	169	175	343
		Internal Capture <sup>4</sup> :	(384)	(1)	(1)	(2)	(23)	(30)	(53)
		Pass-By (34% PM/Daily) <sup>5</sup> :	(1,648)	-	-	-	(49)	(49)	(99)
		<i>Retail Subtotal</i>	<i>2,430</i>	<i>70</i>	<i>43</i>	<i>113</i>	<i>97</i>	<i>96</i>	<i>191</i>
Office	23.000	TSF	250	31	5	35	6	28	34
		Internal Capture <sup>4</sup> :	(74)	(2)	(1)	(3)	(4)	(7)	(11)
		<i>Office Subtotal</i>	<i>176</i>	<i>29</i>	<i>4</i>	<i>32</i>	<i>2</i>	<i>21</i>	<i>23</i>
<b>Total Net Trip Generation</b>			<b>3,188</b>	<b>117</b>	<b>90</b>	<b>206</b>	<b>130</b>	<b>138</b>	<b>266</b>

TSF = Thousand Square Feet

<sup>1</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 221 - Multifamily Housing (Low-Rise, less than 3 floors). Rates are used for projects close to rail transit.

<sup>2</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 821 - Shopping Plaza (40-150k) without Supermarket.

<sup>3</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 710 - General Office Building.

<sup>4</sup> Internal capture calculated using the NCHRP 684 Internal Trip Capture Estimation Tool.

<sup>5</sup> Pass-by percentages from the ITE Trip Generation Handbook, 3rd Edition (2017).

**Table 6. University Village Projects Trip Generation**

Land Use	Units	Daily	AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
<b>Proposed Project Trip Rate</b>									
Multifamily Housing (Mid-Rise) <sup>1</sup>	DU	4.75	0.18	0.14	0.32	0.12	0.17	0.29	
Shopping Plaza without Supermarket <sup>2</sup>	TSF	67.52	1.07	0.66	1.73	2.54	2.65	5.19	
Office <sup>3</sup>	TSF	10.84	1.34	0.18	1.52	0.24	1.20	1.44	
<b>Proposed Project Trip Generation</b>									
Multifamily Housing (Mid-Rise)	1,050	DU	4,988	189	148	336	131	174	305
Internal Capture <sup>4</sup> :			(1,623)	(4)	(105)	(109)	(56)	(25)	(81)
Residential Subtotal			3,365	185	43	227	75	149	224
Shopping Plaza without Supermarket	80,000	TSF	5,402	86	53	139	204	212	416
Internal Capture <sup>4</sup> :			(844)	(3)	(10)	(13)	(27)	(57)	(84)
Pass-By (34% PM/Daily) <sup>5</sup> :			(2,124)	-	-	-	(56)	(56)	(113)
Retail Subtotal			2,435	83	43	126	121	99	219
Office	30,000	TSF	326	41	6	46	8	36	44
Internal Capture <sup>4</sup> :			(123)	(3)	(2)	(5)	(7)	(8)	(15)
Office Subtotal			203	38	4	41	1	28	29
<b>Total Net Trip Generation</b>			<b>6,003</b>	<b>306</b>	<b>90</b>	<b>394</b>	<b>197</b>	<b>276</b>	<b>472</b>

TSF = Thousand Square Feet

<sup>1</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 221 - Multifamily Housing (Mid-Rise, between 4 and 10 floors). Rates are used for projects close to rail transit.

<sup>2</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 821 - Shopping Plaza (40-150k) without Supermarket.

<sup>3</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 710 - General Office Building.

<sup>4</sup> Internal capture calculated using the NCHRP 684 Internal Trip Capture Estimation Tool.

<sup>5</sup> Pass-by percentages from the ITE Trip Generation Handbook, 3rd Edition (2017).

**Table 7. New York Street Village Projects Trip Generation**

Land Use	Units	Daily	AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
<b>Proposed Project Trip Rate</b>									
Multifamily Housing (Low-Rise) <sup>1</sup>	DU	4.72	0.11	0.27	0.38	0.37	0.24	0.61	
Shopping Plaza without Supermarket <sup>2</sup>	TSF	67.52	1.07	0.66	1.73	2.54	2.65	5.19	
Office <sup>3</sup>	TSF	10.84	1.34	0.18	1.52	0.24	1.20	1.44	
<b>Proposed Project Trip Generation</b>									
Multifamily Housing (Low-Rise)	200	DU	944	23	54	76	74	49	122
Internal Capture <sup>4</sup> :			(148)	-	(2)	(2)	(27)	(11)	(38)
Residential Subtotal			796	23	52	74	47	38	84
Shopping Plaza without Supermarket	35,000	TSF	2,364	38	24	61	90	93	182
Internal Capture <sup>4</sup> :			(598)	(10)	(7)	(17)	(16)	(26)	(42)
Pass-By (34% PM/Daily) <sup>5</sup> :			(1,007)	-	-	-	(24)	(24)	(48)
Retail Subtotal			759	28	17	44	50	43	92
Office	175,000	TSF	1,897	235	32	266	43	210	252
Internal Capture <sup>4</sup> :			(216)	(8)	(9)	(17)	(4)	(10)	(14)
Office Subtotal			1,681	227	23	249	39	200	238
<b>Total Net Trip Generation</b>			<b>3,236</b>	<b>278</b>	<b>92</b>	<b>367</b>	<b>136</b>	<b>281</b>	<b>414</b>

TSF = Thousand Square Feet

<sup>1</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 221 - Multifamily Housing (Low-Rise, less than 3 floors). Rates are used for projects close to rail transit.

<sup>2</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 821 - Shopping Plaza (40-150k) without Supermarket.

<sup>3</sup> Trip rates from the Institute of Transportation Engineers, *Trip Generation, 11th Edition, 2021*. Land Use Code 710 - General Office Building.

<sup>4</sup> Internal capture calculated using the NCHRP 684 Internal Trip Capture Estimation Tool.

<sup>5</sup> Pass-by percentages from the ITE Trip Generation Handbook, 3rd Edition (2017).