ADDITIONAL INFORMATION

COUNCIL ITEM
DATE 8F
11A
7-9-12

TORREY PINES INSTITUTE FOR MOLECULAR STUDIES

Dedicated to fundamental research toward the improvement of human health

July 3, 2012

original to City Clerk

Honorable Mayor and City Council, City Manager
City of Port St. Lucie
121 S.W. Port St. Lucie Blvd.
Port St. Lucie, FL 34984-5099

JUL 3 _ 2012
BCCCMF

Re: P11-026-Riverland/Kennedy DRI NOPC

Dear Mayor Faiella and City Council:

Torrey Pines has recently been made aware of the proposed NOPC of Riverland/Kennedy and the potential negative impacts on the Tradition Center for Innovation (TCI) and on Torrey Pines. The proposed changes would result in Riverland/Kennedy building the necessary road improvements in a phased basis based upon certain development thresholds. This would allow Riverland/Kennedy to build between 5000-10,000 homes prior to the construction of the previously determined required transportation improvements. This is proposed without the conducting the corresponding traffic studies to determine the impacts on existing and future roadways.
There is a concern that this will cause the I-95/Gatlin interchange to reach capacity prematurely and require improvements to that interchange by properties located to the east of Riverland/Kennedy or stop development within the TCI as a result of lack of capacity at Gatlin/I-95. If non-residential development is required to expand or improve the interchange due to the traffic impacts of Riverland/Kennedy it will effectively stop development of non-residential development in the TCI with severe negative impacts to the property owners within the TCI, Torrey Pines being one.

Due to the difficulty and expense of expanding the interchange if there is inadequate network in place it will effectively block commercial development in the TCI.
Torrey Pines is requesting that this concern be addressed prior to the approval of the proposed DRI or that Torrey Pines and the properties within the TCI receive the necessary assurances from the City of Port St. Lucie and Florida Department of Transportation that their development will not be restricted due to the development of Riverland/Kennedy and its traffic impacts.

Sincerely,

Donald B. Cooper
CBO/CFO

cc: Wes McCurry
G. Oravec, City Manager
Richard Houghten CEO, PhD

11350 SW Village Parkway, Port St. Lucie, Florida 34987 USA • Telephone (772) 345-4800 • Fax (772) 345-3649
3550 General Atomics Court, San Diego, California 92121 USA • Telephone (858) 597-3803 • Fax (858) 597-3804
www.tpmi.org

8F.11A
COUNCIL ITEM
DATE 7-9-12

original to City Clerk

JUL 3 - 2012

MacKenzie
Engineering & Planning, Inc.
10795 SW Civic Lane • Port Saint Lucie • Florida • 34987
(772) 345-1948 • www.mackenzieengineeringinc.com

To: City Council Members

From: Shaun G. MacKenzie, P.E.

Date: July 3, 2012

Re: Analysis of Riverland DRI Roadway Timing

Riverland/Kennedy DRI (Riverland) is proposing to amend their Development Order (DO) to separate their road conditions from the other DRIs in the Southwest Annexation Area (SWAA). Riverland is proposing to build the remaining road segments of the SWAA not previously committed by the Southern Grove or Wilson Groves DRIs. However, the timing of the Riverland road improvements has never been studied and as proposed will cause problems for the City and adjacent developers. The Riverland DO proposes to allow the Riverland Developer to continue to build several thousand homes long after the roads are needed (refer to Table 1). As proposed, the DO plans for **failure of 17 of the 21 roadway segments** in the DRI. On average the Riverland Developer is proposing to be allowed to build 2,700 homes after most of the roads are planned to fail.

MacKenzie Engineering and Planning, Inc. conducted an analysis of Riverland roadway needs based on the Western Annexation Traffic Study (WATS). Riverland has not performed any traffic analysis to justify the timing of 46 miles of roads in the SWAA that are the responsibility of Riverland. Failure to adopt an adequate road construction schedule has the potential to cause significant road capacity deficiencies to exist for a long period of time.

The recommendations for roadway needs are based on engineering analysis and are based on the traffic study that all parties (Developers, City, TCRPC, FDOT) to the WATS agreed upon and accepted. The Riverland DRI Road Phasing schedule proposed herein is based on analysis of roadway need using traffic volumes and linear interpolation to determine the trip and dwelling unit (DU) thresholds. The traffic analysis is attached to this memorandum (Appendix A).

The use of these trip thresholds will protect the City in the future and guide the construction of the SWAA Roadway Network in an orderly, predictable, and consistent approach. The proposed changes only affect two of the 56 Riverland DRI conditions. Therefore, in order to protect the City and residents and businesses of adjacent developments, we recommend adoption of the proposed conditions 18 and 19 attached herein in place of conditions 18 and 19 as proposed by City staff and Riverland.

Additionally, in order to resolve an inconsistency with the current Riverland DRI DO and the Annexation Agreement, the analysis and recommended DO conditions have the Riverland DRI constructing the first 2-lanes of Becker Road (consistent with the Southwest Annexation Agreement) instead of the 4-laning of E/W 3. This change results in a slight decrease in lane-miles and cost for the Riverland DRI.

Please do not hesitate to contact me if you have any questions at 772-834-8909.

cc: Greg Oravec (Port St. Lucie)
Daniel Holbrook (Port St. Lucie)
Roger Orr (Port St. Lucie)
Roxanne Chesser (Port St. Lucie)
Pol Africano (CMS Engineering, LLC)
Wesley McCurry (Fishkind & Associates)

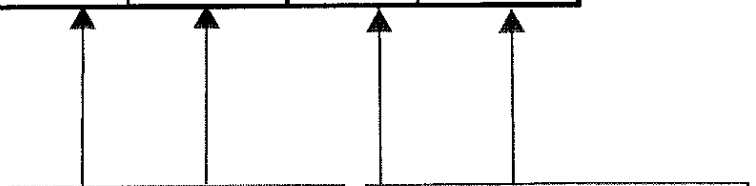
Attachments:
Table 1
Recommended Conditions 18 and 19
Appendix A

TABLE 1. HOMEBUILDING AND TRIP COMPARISON OF NEEDED AND PROPOSED ROAD BUILDING TIMES

	Riverland DRI Road Conditions and Development Obtained by Improvement						Riverland DRI D.O.	
DRI Phase	Road	From	To	Required Improvement	**Trip Threshold**	Residential Units	**Trip Threshold**	Residential Units
1	Community Blvd	Discovery Way	E/W 3	2-Lanes	1,071	832	**3,219**	2,500
	Community Blvd	E/W 3	Becker Rd	2-Lanes	1,071	832	**3,219**	2,500
	Becker Road	N/S B	Community	2-Lanes	1,071	832	**None**	None
	E/W 3	N/S B	Community	2-Lanes	1,140	885	**3,219**	2,500
	Becker Road	N/S B	Community	2L to 4L	2,142	1,664	**10,935**	10,400
2	N/S A	Discovery Way	E/W 3	2-Lanes	3,219	2,500	**10,935**	10,400
	Paar Dr	N/S B	Community	2-Lanes	6,475	5,834	**10,935**	10,400
	Discovery Way	N/S B	Community	2-Lanes	7,287	6,666	**10,935**	10,400
	N/S B	Discovery Way	E/W 3	2-Lanes	7,580	6,966	**10,935**	10,400
	N/S B	Paar Dr	Becker Rd	2L to 4L	8,980	8,399	**13,461**	11,700
	Discovery Way	N/S A	N/S B	2-Lanes	9,491	8,922	**10,935**	10,400
	Paar Dr	N/S B	Community	2L to 4L	9,553	8,986	**13,461**	11,700
	Discovery Way	N/S B	Community	2L to 4L	10,371	9,823	**13,461**	11,700
	Discovery Way	Rangeline	N/S A	2-Lanes	10,935	10,401	10,935	10,400
3	Community Blvd	E/W 3	Paar Dr	2L to 4L	10,959	10,413	**13,461**	11,700
	N/S A	Discovery Way	E/W 3	2L to 4L	11,183	10,529	**13,461**	11,700
	Becker Road	N/S B	Community	4L to 6L	12,347	11,127	**13,461**	11,700
	Community Blvd	Discovery Way	E/W 3	2L to 4L	12,910	11,417	**13,461**	11,700
	E/W 3	N/S B	Community	2L to 4L	13,461	11,700	13,461	11,700
4	N/S B	Discovery Way	E/W 3	2L to 4L	13,461	11,700	13,461	11,700
	N/S B	E/W 3	Paar Dr	2L to 4L	13,461	11,700	13,461	11,700

DRI PHASING SCHEDULE

DRI Phase	Residential Units	Non-Res SF	Trip Threshold
0	0	0	0
1	2,500	514,250	3,219
2	10,401	2,163,776	10,935
3	11,700	3,227,526	13,461
4	11,700	4,044,276	14,372



Numbers in red show deficient road segments.

Riverland/Kennedy Access Road Improvements

18. No building permits shall be issued for development that generates more than the total net external p.m. peak hour trip threshold or residential units identified in Table 1, whichever comes last, until: 1) contracts have been let for the roadway construction projects identified in Table 1 under "Required Improvement"; or 2) a local government development agreement consistent with sections 163.3220 through 163.3243, F.S. has been executed; or 3) the improvement is scheduled in the first three years of the applicable jurisdiction's Capital Improvements Program or FDOT's adopted work program.

Table 1
Riverland/Kennedy Access Roads

Road	From	To	Trip Threshold*	Residential Units	Improvement
Community Blvd.	Discovery Way	South for 2,500 Ft.	0	0	2L
Secondary Emergency Acess Road at E/W #1 between Community Blvd. and Rangeline Rd.			0	0	Emergency Access Road
Improvements for a full 2 lane by 2 lane intersection at Discovery Way and Community Blvd.			0	0	2x2 intersection
~~Community Blvd.~~	~~Discovery Way~~	~~E/W 3~~	~~773~~	~~600~~	~~2L~~
~~Discovery Way~~	~~Community Blvd.~~	~~West for 2,500 Ft.~~	~~1,545~~	~~1,200~~	~~2L~~
~~E/W 3~~	~~Community Blvd.~~	~~West for 2,500 Ft.~~	~~2,318~~	~~1,800~~	~~2L~~

*Riverland/Kennedy Cumulative Total Net External DRI p.m. Peak Hour Trips

Riverland/Kennedy DRI Roadway Improvements

19. No building permits shall be issued for development that generates more than the total net external p.m. peak hour trip threshold or residential units identified in Table 2, whichever comes last, until: 1) contracts have been let for the roadway widening or construction projects identified in Table 2 under "Required Improvement", or 2) a local government development agreement consistent with sections 163.3220 through 163.3243, F.S. has been executed; or 3) the monitoring program included in Condition 15 does not require these improvements; or 4) the improvement is scheduled in the first three years of the applicable jurisdiction's Capital Improvements Program or FDOT's adopted work program.

Table 2

Riverland/Kennedy DRI Road Improvements

Road	From	To	Trip Threshold	Residential Units	Improvement
Phase 1					
Community Blvd.	~~E/W 3~~ Discovery Way	~~Paar Dr.~~ E/W 3	~~3,219~~ 1,071	~~2,500~~ 832	2L
Community Blvd.	~~Paar Dr.~~ E/W 3	Becker Rd.	~~3,219~~ 1,071	~~2,500~~ 832	2L
Becker Road	Community Blvd.	N/S B	1,071	832	2L
E/W 3	Community Blvd.	N/S B	~~3,219~~ 1,140	~~2,500~~ 885	2L
Becker Road	Community Blvd.	N/S B	2,142	1,664	Widen to 4LD
Phase 2					
N/S B	Discovery Way	E/W 3	~~10,935~~ 7,580	~~10,400~~ 6,966	2L
Paar Dr.	Community Blvd.	N/S B	~~10,935~~ 6,475	~~10,400~~ 5,834	2L
Discovery Way	Community Blvd.	N/S B	~~10,935~~ 7,287	~~10,400~~ 6,666	2L
N/S B	Paar Dr.	Becker Rd.	8,980	8,399	Widen to 4LD
Discovery Way	~~N/S B~~	N/S A	~~10,935~~ 9,491	~~10,400~~ 8,922	2L
Paar Dr.	Community Blvd.	N/S B	9,553	8,986	Widen to 4LD
Discovery Way	Community Blvd.	N/S B	10,371	9,823	Widen to 4LD
Discovery Way	N/S A	Rangeline Rd.	10,935	10,400	2L
~~Becker~~	~~Community~~	~~N/S B~~	~~10,935~~	~~10,400~~	~~Widen to 4LD~~
N/S A	Discovery Way	E/W 3	~~10,935~~ 3,219	~~10,400~~ 2,500	2L
Phase 3					
Community Blvd.	Discovery Way	E/W 3	~~13,461~~ 12,910	~~11,700~~ 11,417	Widen to 4LD
Community Blvd.	E/W 3	Paar Dr.	~~13,461~~ 10,959	~~11,700~~ 10,413	Widen to 4LD
N/S A	Discovery Way	E/W 3	11,183	10,529	Widen to 4LD
Becker	Community	N/S B	~~13,461~~ 12,910	~~11,700~~ 11,417	Widen to 6LD
E/W 3	Community	N/S B	13,431	11,700	Widen to 4LD
~~N/S B~~	~~Paar Dr.~~	~~Becker Rd.~~	~~13,461~~	~~11,700~~	~~Widen to 4LD~~
~~Discovery Way~~	~~Community Blvd.~~	~~N/S B~~	~~13,461~~	~~11,700~~	~~Widen to 4LD~~
~~Paar Dr.~~	~~Community Blvd.~~	~~N/S B~~	~~13,461~~	~~11,700~~	~~Widen to 4LD~~
Phase 4					
~~N/S A~~	~~Discovery Way~~	~~E/W 3~~	~~13,461~~	~~11,700~~	~~Widen to 4LD~~
N/S B	E/W 3	Paar Dr.	13,461	11,700	Widen to 4LD
N/S B	Discovery Way	E/W 3	13,461	11,700	Widen to 4LD
~~E/W 3~~	~~Community~~	~~N/S B~~	~~13,461~~	~~11,700~~	~~Widen to 4LD~~
~~E/W 3~~	~~N/S B~~	~~N/S A~~	~~13,461~~	~~11,700~~	~~Widen to 4LD~~

*Riverland/Kennedy Cumulative Total Net External DRI p.m. Peak Hour Trips
L=Lane D=Divided

APPENDIX A

RIVERLAND/KENNEDY DRI

ANALYSIS OF ROADWAY NEEDS

MacKenzie
Engineering & Planning, Inc.
10795 SW Civic Lane • Port Saint Lucie • Florida • 34987
(772) 345-1948 • www.mackenzieengineeringinc.com

To: Daniel Holbrook, AICP

From: Shaun G. MacKenzie, P.E.

Date: June 28, 2012

Re: Analysis of Riverland DRI Roadway Needs

MacKenzie Engineering and Planning, Inc. conducted an analysis of Riverland DRI's roadway needs based on the Western Annexation Traffic Study (WATS). The applicant has not performed a traffic analysis and has accordingly not performed any traffic analysis planning the timing of $160,000,000 of roads in the Southwest Annexation Area (SWAA). Failure to adopt the road construction schedule proposed has the potential to cause the City to need to build roads in the Riverland DRI at a cost of tens of millions of dollars.

This traffic analysis proposes road construction timing consistent with the need to widen the road or build a parallel facility and generally matches the WATS roadway building schedule. The recommendations for roadway needs are based on engineering analysis and are based on the traffic study that all parties to the Western Annexation Area agreed upon and accepted.

The Riverland DRI Road Phasing schedule is based on analytical analysis of roadway need using traffic volumes and linear interpolation to determine the trip and DU thresholds. Attached is the analysis performed using the traffic volumes from the WATS. The methodology for the analysis is consistent with the analysis performed for the Wilson Groves DRI and is as follows:

- Use the WATS model traffic volumes to determine the timing of road improvements
- Use a "grid system" analysis to determine timing of new parallel road improvements
- Follow the WATS laneage by Phase (i.e. – build Community Blvd to the South to Becker Road in lieu of widening it four-lanes in Phase 1) to allow traffic to distribute properly
- In order to resolve an inconsistency with the current Riverland DRI annexation agreement and development order – the analysis and recommended improvements has the Riverland DRI constructing the first 2-lanes of Becker Road (consistent with the Southwest Annexation Agreement) and not the 4-laning of E/W 3, which results in a slight decrease in lane-miles and cost for the Riverland DRI

The use of these trip thresholds will protect the City in the future and guide the construction of the Southwest Annexation Area Roadway Network in an orderly, predictable, and consistent approach.

Please do not hesitate to contact me if you have any questions at 772-834-8909.

cc: Greg Oravec (Port St. Lucie)
Pam Hakim (Port St. Lucie)
Roxanne Chesser (Port St. Lucie)
Pol Africano (CMS Engineering, LLC)
Wesley McCurry (Fishkind & Associates)

TABLE 1 Proposed Phase 1 Road Improvements and Calculated Trip Thresholds

Road	Segment	Improvement	Capacity (1)	Phase 1 Trips On Segment DRI (2)	Phase 1 Trips On Segment Total (3)	Ratio (4)	Phase 0 Trips On Segment DRI (5)	Phase 0 Trips On Segment Total (6)	Avail Cap (7)	DRI Pnase Trips on Segment (8)	Usable Cap (9)	% of DRI Phase at seg Cap. (10)	Phase 1 DRI Trips Daily (11)	Phase 1 DRI Trips PM Peak (12)	Trip Threshold (13)
Community Blvd	E/W 1 to E/W 3 (a)	0L to 2L	16,500	20,700	49,600	0.417	0	0	16,500	20,700	6,886	33%	32,007	3,219	1,071
Community Blvd	E/W 3 to Becker Rd (a)	0L to 2L	16,500	20,700	49,600	0.417	0	0	16,500	20,700	6,886	33%	32,007	3,219	1,071
Becker Road	N/S B to Community	0L to 2L	16,500	20,700	49,600	0.417	0	0	16,500	20,700	6,886	33%	32,007	3,219	1,071
Becker Road	N/S B to Community	2L to 4L	16,500	6,200	24,800	0.250	0	0	16,500	6,200	4,125	67%	32,007	3,219	2,142
E/W 3	N/S B to Community (b)	0L to 2L	16,500	18,200	46,600	0.391	0	0	16,500	18,200	6,444	35%	32,007	3,219	1,140

(a) DRI and Total Volume based on Phase 1 Becker Road (East of Community) plus Phase 1 Becker Road (East of Rangeline Rd) plus Phase 1 South of E/W 1 (See WATS Appendix D)

(b) DRI and Total Volume based on Phase 1 Becker Road (West of Community) plus E/W 3 Becker Road (West of Community) plus Phase 1 Becker Road (East of Rangeline Road) (See WATS Appendix D)

TABLE 2 Proposed Phase 2 Road Improvements and Calculated Trip Thresholds

Road	Segment	Improvement	Capacity (1)	Phase 2 Trips On Segment DRI (2)	Phase 2 Trips On Segment Total (3)	Ratio (4)	Phase 1 Trips On Segment DRI (5)	Phase 1 Trips On Segment Total (6)	Avail Cap (7)	DRI Phase Trips on Segment (8)	Usable Cap (9)	% of DRI Phase at seg Cap. (10)	Phase 2 DRI Trips Daily (11)	Phase 2 DRI Trips PM Peak (12)	Trip Threshold (13)
E/W 1	N/S B to Community (c)	0L to 2L	16,500	18,700	31,300	0.597	0	0	16,500	18,700	9,858	53%	110,332	10,935	7,287
E/W 1	N/S A to N/S B (d)	0L to 2L	16,500	14,600	20,300	0.719	0	0	16,500	14,600	11,867	81%	110,332	10,935	9,491
E/W 1	Rangeline to N/S A	0L to 2L	16,500	3,000	3,600	0.833	0	0	16,500	3,000	13,750	458%	110,332	10,935	10,935
N/S A	E/W 1 to E/W 3 (e)	0L to 2L	16,500	26,000	48,000	0.448	11,900	16,500	0	14,100	0	0%	110,332	10,935	3,219
N/S B	E/W 1 to E/W 3 (e)	0L to 2L	33,000	26,000	48,000	0.754	0	13,500	19,500	26,000	14,696	57%	110,332	10,935	7,680
Paar Dr	N/S B to Community (f)	0L to 2L	36,700	25,600	53,000	0.688	6,200	24,800	11,900	19,400	8,187	42%	110,332	10,935	6,475
Paar Dr	N/S B to Community	2L to 4L	16,500	9,800	20,100	0.488	0	0	16,500	9,800	8,045	82%	110,332	10,935	9,553
E/W 1	N/S B to Community	2L to 4L	16,500	8,700	17,800	0.489	0	0	16,500	8,700	8,065	93%	110,332	10,935	10,371
N/S B	Paar Dr to Becker Rd (g)	2L to 4L	16,500	16,500	22,100	0.747	0	0	16,500	16,500	12,319	75%	110,332	10,935	8,980

(c) DRI and Total Volume based on Phase 2 E/W 3 plus E/W 1 (West of Community) (See WATS Appendix D)

(d) DRI and Total Volume based on Phase 2 E/W 3 plus E/W 1 (West of Community) (See WATS Appendix D)

(e) DRI and Total Volume based on Phase 2 N/S A plus N/S B plus Community (South of E/W 1) (See WATS Appendix D)

(f) DRI and Total Volume based on Phase 2 Becker Road plus Paar Dr (West of Community) (See WATS Appendix D)

(g) DRI and Total Volume based on Phase 2 N/S B plus N/S BC (South of Paar) (See WATS Appendix D)

TABLE 3 Proposed Phase 3 Road Improvements and Calculated Trip Thresholds

Road	Segment	Improvement	Capacity (1)	Phase 3 Trips On Segment DRI (2)	Phase 3 Trips On Segment Total (3)	Ratio (4)	Phase 2 Trips On Segment DRI (5)	Phase 2 Trips On Segment Total (6)	Avail Cap (7)	DRI Phase Trips on Segment (8)	Usable Cap (9)	% of DRI Phase at seg Cap. (10)	Phase 3 DRI Trips Daily (11)	Phase 3 DRI Trips PM Peak (12)	Trip Threshold (13)
Becker Road	N/S B to Community	4L to 6L	36,700	17,000	39,700	0.176	15,800	32,900	3,800	1,200	671	56%	134,672	13,461	12,347
N/S A	E/W 1 to E/W 3	2L to 4L	16,500	11,300	30,200	0.374	7,100	15,400	1,100	4,200	412	10%	134,673	13,461	11,183
Community Blvd	E/W 1 to E/W 3	2L to 4L	16,500	15,400	21,600	0.713	12,300	13,100	3,400	3,100	2,424	78%	134,674	13,461	12,910
Community Blvd	E/W 3 to Paar Dr	2L to 4L	16,500	14,100	25,500	0.553	8,300	16,400	100	5,800	55	1%	134,675	13,461	10,959
Community Blvd	Paar Dr to Becker Rd	2L to 4L	16,500	8,000	13,000	0.615	6,200	8,500	8,000	1,800	4,923	100%	134,676	13,461	13,461
E/W 3	N/S B to Community	2L to 4L	16,500	12,100	16,600	0.729	10,000	13,500	3,000	2,100	2,187	100%	134,678	13,461	13,461

TABLE 4 Proposed Phase 4 Road Improvements and Calculated Trip Thresholds

Road	Segment	Improvement	Capacity (1)	Phase 4 Trips On Segment DRI (2)	Phase 4 Trips On Segment Total (3)	Ratio (4)	Phase 3 Trips On Segment DRI (5)	Phase 3 Trips On Segment Total (6)	Avail Cap (7)	DRI Phase Trips on Segment (8)	Usable Cap (9)	% of DRI Phase at seg Cap. (10)	Phase 4 DRI Trips Daily (11)	Phase 4 DRI Trips PM Peak (12)	Trip Threshold (13)
N/S B	E/W 1 to E/W 3	2L to 4L	16,500	10,800	14,800	0.730	10,800	14,200	2,300	0	1,678	-	140,083	14,372	14,372
N/S B	E/W 3 to Paar Dr	2L to 4L	16,500	11,100	12,600	0.881	11,500	12,300	4,200	-400	3,700	-	140,083	14,372	14,372

(1) Road Capacity Based obtained from Table 1 of FDOT's *2010 Q/LOS Manual* for Urbanized City Arterial Class 1 Facilities

(4) Ratio of Riverland Phase traffic to Phase Total Traffic = [(2) - (5)] / [(3) - (6)]

(7) Availabe Capacity - Capacity available for use during that phase = (1) - (6)

(8) Riverland Phase Traffic on the segment = (2) - (5)

(9) Usable Capacity = (7) x (4)

(10) % of DRI Phase at Segment Capacity - Percent of that DRI Phase that can be constructed before the roadway reaches capacity = (9) / (8)

(11) Cumulative Total Net External Daily DRI trips by Phase

(12) Cumulative Total Net External PM Peak Hour DRI trips by Phase

(13) Trip Threshold - Interpolated Net External DRI PM Peak Hour Trip Threshold when segment is expected to reach capacity

(Prior Phase (12) + [(10) x Current Phase (12) - Prior Phase (12)])