

<b>Proposal ID:</b>	ITN-DOT-08-09-5001-LOC
<b>Project Number:</b>	41299465302
<b>Description:</b>	Central Florida Commuter Rail Transit (CFCRT) Diesel Electric Passenger Locomotives

Question	Response
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<p><i>Posted: Thursday, 12/18/2008 @ 4:00pm - SSS</i></p> <ol style="list-style-type: none"> <li>1) Does the fuel tank need to meet S5506 crash-worthy standards?</li> <li>2) What are the minimum travel times within the systems operating system? Need time table and track charts.</li> <li>3) Is AESS sufficient as a hotstart overlayer protection?</li> <li>4) What is driving the 250Ft3 / minute air compressor minimum output? Is there a minimum time to charge air?</li> <li>5) The sheet says 16' height max and the drawing shows a 17' height max - can you clarify the discrepancy?</li> <li>6) What are the performance requirements?</li> <li>7) What kind of event recorder is required?</li> <li>8) What kind of radio is required?</li> <li>9) Do you need HOTD &amp; EOT's?</li> <li>10) Does the operator cab need emergency lighting and an escape hatch in the roof?</li> <li>11) Is Dynamic Brake an options? What performance is expected for Dynamic Brake (#klbsc what speeds)</li> <li>12) Any dummy MU's?</li> <li>13) What kind and brand of ATC is required?</li> <li>14) Do noise emission compliance regulations only need to meet FRA requirements?</li> <li>15) Do you need automatic couplers?</li> </ol>	<ol style="list-style-type: none"> <li>1) Our interpretation of Subpart D (49CFR229.141) is that 49CFR229.217 requires all locomotives built since 1956 must meet AAR S5506. If this does not answer your question or you still have concern, please provide additional information about your concern with the FRA requirement.</li> <li>2) See Table 8, 9 and Appendices A, B, C for Trip Times. The locomotives would have to meet Trip Times for the 2016 Full Build Scenario. Assume mass of Coach is 113,000 + 29,605 passenger load, and Cab Car is 116,500 + 24,800 passenger load.</li> <li>3) Provide details of the AESS in your proposal.</li> <li>4) This is the rating of the Gardner Denver WLNA9AN air compressor at 900 rpm.</li> <li>5) Sixteen Feet is the maximum height for carbody, seventeen feet is maximum height for any antennas of roof or other roof mounted equipment.</li> <li>6) See Response 2 above and attachments</li> <li>7) FRA Compliant 49CFR229.</li> <li>8) The Contractor shall propose a radio with features that meet or exceed those of the Motorola Spectra radio or GE Model 12R Series II, with external MIC option, 96 channels.</li> <li>9) Cab Cars and Locomotives will have marker lights. If you refer to End of Train brake pressure Telemetry and the Head End Receiver, then these are not required.</li> <li>10) Emergency Lighting is not required in locomotives. A roof hatch would not be required, but decals, complying with APTA RP-C&amp;S-001-98 should be applied to the roof of the locomotive cab.</li> <li>11) The locomotive ITN states: "Blended air/dynamic brake from automatic brake valve." So yes, dynamic brake is required. And that coordination is required with the carbuilder. It can be assumed that brake rates should be</li> </ol>
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	<p>about 1.8 mphs for full service braking. But coordination between the locomotive supplier and the carbuilder are required on numerous design issues.</p> <p>12) Means to secure jumper cables for switch moves should be incorporated in the design. These could be dummy MU receptacles, or chains.</p> <p>13) CSX will continue to operate freight trains over the commuter rail corridor. CFCRT will have a system compatible with CSX's system. CSX has tested both the WABCO ETMS – Electronic Train Management System and the CBTM - Communications Based Train Management System. CFCRT will likely select the CSX preferred system. At this time, assume the provision for Positive Train Control could be for either of the Wabco systems. We will provide more details, as available.</p> <p>14) Yes.</p> <p>15) Couplers will be AAR tightlock shelf couplers.</p>
<p><u>Posted: Thursday, 12/18/2008 @ 4:00pm - SSS</u></p> <p><b>16)</b> In the Exhibit "D" Vehicle Criteria it is requested that the prime mover shall have a minimum power of 3000 hp; the next point also specifies that HEP can be provided by a separate diesel engine whose power output shall be within 300 and 500 kW.</p> <p>Please clarify if the minimum power of the prime mover (3000 hp) is intended as including the power for the HEP or if the required prime engine power (3000 hp) shall be used totally for traction purposes.</p>	<p>16) Trip times would dictate. See response to 2) above, and attachments for performing your own analysis. Based upon your locomotive traction motor gearing and tractive effort curves, it may require more than 3000 hp for tractive effort alone.</p>
<p><u>Posted: Thursday, 12/18/2008 @ 4:00pm - SSS</u></p> <p><b>17)</b> In the bid package it spec's 3000 HP and four wheel locomotive. Is there any spec as far as the type of carbody configuration? GP-40, F-40 wide body cab</p>	<p>17) Carbody configuration is open. See response to 16) above.</p>

**Table 8 – “Full” Build Estimated Station-to-Station Run Times**

Station	Speed (mph)		Distance (miles)			Run Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)
	Authorized	Actual	Mile Post	Increment	Total			
DeLand Amtrak			750.00		0.00		00:00:00	00:00:00
Speed Restriction	79	65		1.10		00:01:41		
Speed Restriction	50	50	751.10	0.40	1.10	00:00:30	00:00:00	00:01:41
Speed Restriction	79	65	751.50	8.30	1.50	00:08:13	00:00:00	00:02:11
Speed Restriction	60	60	759.80	2.01	9.80	00:02:23	00:00:00	00:10:25
DeBary			761.81		11.81		00:00:30	00:13:18
Speed Restriction	60	60	763.10	1.29	13.10	00:01:52	00:00:00	00:15:10
Speed Restriction	45	45	763.10	2.70	13.10	00:03:58	00:00:00	00:15:10
Sanford			765.80		15.80		00:00:30	00:19:38
Speed Restriction	60	50	766.30	0.50	16.30	00:01:01	00:00:00	00:20:39
Speed Restriction	30	30	766.80	0.50	16.80	00:01:03	00:00:00	00:21:42
Speed Restriction	50	50	766.80	3.26	16.80	00:04:30	00:00:00	00:21:42
Lake Mary			773.20		20.06		00:00:30	00:26:42
Speed Restriction	79	65		4.48		00:05:14		
Longwood			777.68		24.54		00:00:30	00:32:26
Speed Restriction	60	60		2.77		00:03:41		
Altamonte Springs			780.45		27.31		00:00:30	00:36:36
Speed Restriction	50	50	782.00	1.55	28.86	00:02:20	00:00:00	00:38:56
Speed Restriction	40	40	782.00	1.25	28.86	00:02:08	00:00:00	00:38:56
Maitland			783.25		30.11		00:00:30	00:41:34
Speed Restriction	30	30		2.34		00:05:11		
Winter Park / Amtrak			785.59		32.45		00:00:30	00:47:15
Speed Restriction	30	30		2.31		00:05:07		
Florida Hospital			787.90		34.76		00:00:30	00:52:52
Speed Restriction	30	30		1.90		00:04:15		
LYNX Central Station			789.80		36.66		00:01:00	00:58:07
Speed Restriction	30	30		0.70		00:01:44		
Church St.			790.50		37.36		00:00:30	01:00:21
Speed Restriction	30	30		0.90		00:02:09		
Orlando Amtrak			791.40		38.26		00:00:30	01:03:00
Speed Restriction	40	40		2.20		00:03:42		
Speed Restriction	79	65	793.60	1.00	40.46	00:01:17	00:00:00	01:06:41
Speed Restriction	60	65	794.60	1.90	41.46	00:02:07	00:00:00	01:07:58
SR 408 / Sand Lake Road			796.50		43.36		00:00:30	01:10:35
Speed Restriction	79	65		4.55		00:05:18		
Meadow Woods			801.05		47.91		00:00:30	01:16:23
Speed Restriction	79	65		2.75		00:03:16		
Speed Restriction	65	65	803.80	0.70	50.66	00:00:58	00:00:00	01:19:40
Osceola Parkway			804.50		51.36		00:00:30	01:21:07
Speed Restriction	65	65		2.50		00:03:04		
Speed Restriction	45	45	807.00	1.04	53.86	00:01:39	00:00:00	01:24:11
Kissimmee Amtrak			808.04		54.90		00:00:30	01:26:20
Speed Restriction	45	45		0.76		00:01:20		
Speed Restriction	79	65	808.80	4.80	55.66	00:05:11	00:00:00	01:27:40
Poinciana Boulevard			813.60		60.46		00:00:00	01:32:50
<b>TOTAL</b>					<b>60.46</b>	<b>01:24:50</b>	<b>00:08:00</b>	<b>01:32:50</b>
						<b>Avg. Speed =</b>	<b>39.1 mph</b>	

**NOTES:**

1. Distances based on CFCRT station locations.
2. Run times based on acceleration & deceleration rates for MP-36PH-3C locomotive + 2 coach cars (per Sysra Consulting, Sept. 19, 2008).
3. Run times include 5.0% allowance for passenger comfort, dispatching delays, ADA compliance (per Sysra Consulting, Sept. 19, 2008).
4. Maximum 65 mph speed assumed; reduced speeds up to Authorized Speed (CSX Track Chart).

**APPENDIX A**  
**IOS 2010 SCENARIO PRELIMINARY TRAIN SCHEDULES**

**SOUTHBOUND DIRECTION**

Train No.	To From	DeBary	Sanford SR 46	Lake Mary	Longwood SR 434	Altamonte Springs	Maitland	Winter Park	Florida Hospital	Orlando LCS	Church Street	ORMC/ Amtrak	Sand Lake	Layover
2	From Yard	5:30	5:36	5:43	5:49	5:53	5:58	6:03	6:09	6:14	6:17	6:19	6:26	0:18
3	From Yard	6:00	6:06	6:13	6:19	6:23	6:28	6:33	6:39	6:44	6:47	6:49	6:56	0:18
4	From Yard	6:30	6:36	6:43	6:49	6:53	6:58	7:03	7:09	7:14	7:17	7:19	7:26	0:18
5	From Yard	7:00	7:06	7:13	7:19	7:23	7:28	7:33	7:39	7:44	7:47	7:49	7:56	0:18
1		7:30	7:36	7:43	7:49	7:53	7:58	8:03	8:09	8:14	8:17	8:19	8:26	0:18
2		8:00	8:06	8:13	8:19	8:23	8:28	8:33	8:39	8:44	8:47	8:49	8:56	To Yard
1		10:00	10:06	10:13	10:19	10:23	10:28	10:33	10:39	10:44	10:47	10:49	10:56	0:18
1		12:30	12:36	12:43	12:49	12:53	12:58	13:03	13:09	13:14	13:17	13:19	13:26	0:18
1		15:00	15:06	15:13	15:19	15:23	15:28	15:33	15:39	15:44	15:47	15:49	15:56	0:18
2	From Yard	15:30	15:36	15:43	15:49	15:53	15:58	16:03	16:09	16:14	16:17	16:19	16:26	0:18
3	From Yard	16:00	16:06	16:13	16:19	16:23	16:28	16:33	16:39	16:44	16:47	16:49	16:56	0:18
4	From Yard	16:30	16:36	16:43	16:49	16:53	16:58	17:03	17:09	17:14	17:17	17:19	17:26	0:18
5	From Yard	17:00	17:06	17:13	17:19	17:23	17:28	17:33	17:39	17:44	17:47	17:49	17:56	0:18
1		17:30	17:36	17:43	17:49	17:53	17:58	18:03	18:09	18:14	18:17	18:19	18:26	0:18
2		18:00	18:06	18:13	18:19	18:23	18:28	18:33	18:39	18:44	18:47	18:49	18:56	0:18
1		20:00	20:06	20:13	20:19	20:23	20:28	20:33	20:39	20:44	20:47	20:49	20:56	0:18

**NORTHBOUND DIRECTION**

Train No.	To From	Sand Lake	ORMC Amtrak	Church Street	Orlando LCS	Florida Hospital	Winter Park	Maitland	Altamonte Springs	Longwood SR 434	Lake Mary	Sanford SR 46	DeBary	Layover
1	From Yard	6:15	6:22	6:24	6:26	6:32	6:37	6:43	6:48	6:52	6:58	7:05	7:11	0:18
2		6:45	6:52	6:54	6:56	7:02	7:07	7:13	7:18	7:22	7:28	7:35	7:41	0:18
3		7:15	7:22	7:24	7:26	7:32	7:37	7:43	7:48	7:52	7:58	8:05	8:11	To Yard
4		7:45	7:52	7:54	7:56	8:02	8:07	8:13	8:18	8:22	8:28	8:35	8:41	To Yard
5		8:15	8:22	8:24	8:26	8:32	8:37	8:43	8:48	8:52	8:58	9:05	9:11	To Yard
1		8:45	8:52	8:54	8:56	9:02	9:07	9:13	9:18	9:22	9:28	9:35	9:41	0:18
1		11:15	11:22	11:24	11:26	11:32	11:37	11:43	11:48	11:52	11:58	12:05	12:11	0:18
1		13:45	13:52	13:54	13:56	14:02	14:07	14:13	14:18	14:22	14:28	14:35	14:41	0:18
1		16:15	16:22	16:24	16:26	16:32	16:37	16:43	16:48	16:52	16:58	17:05	17:11	0:18
2		16:45	16:52	16:54	16:56	17:02	17:07	17:13	17:18	17:22	17:28	17:35	17:41	0:18
3		17:15	17:22	17:24	17:26	17:32	17:37	17:43	17:48	17:52	17:58	18:05	18:11	To Yard
4		17:45	17:52	17:54	17:56	18:02	18:07	18:13	18:18	18:22	18:28	18:35	18:41	To Yard
5		18:15	18:22	18:24	18:26	18:32	18:37	18:43	18:48	18:52	18:58	19:05	19:11	To Yard
1		18:45	18:52	18:54	18:56	19:02	19:07	19:13	19:18	19:22	19:28	19:35	19:41	0:18
2		19:15	19:22	19:24	19:26	19:32	19:37	19:43	19:48	19:52	19:58	20:05	20:11	To Yard
1		21:15	21:22	21:24	21:26	21:32	21:37	21:43	21:48	21:52	21:58	22:05	22:11	To Yard

APPENDIX B  
LPA 2013 SCENARIO PRELIMINARY TRAIN SCHEDULES

SOUTHBOUND DIRECTION

Train No.	To From	DeBary	Sanford Amtrak	Lake Mary	Longwood SR 434	Altamonte Springs	Maitland	Winter Park	Florida Hospital	Orlando LCS	Church Street	ORMC/ Amtrak	Sand Lake SR 408	Meadow Woods	Osceola Pkwy.	Kissimmee Amtrak	Poinciana Blvd.	Layover
4	From Yard	5:30	5:36	5:43	5:49	5:53	5:58	6:03	6:09	6:14	6:17	6:19	6:27	6:33	6:37	6:43	6:49	0:25
5	From Yard	6:00	6:06	6:13	6:19	6:23	6:28	6:33	6:39	6:44	6:47	6:49	6:57	7:03	7:07	7:13	7:19	0:25
6	From Yard	6:30	6:36	6:43	6:49	6:53	6:58	7:03	7:09	7:14	7:17	7:19	7:27	7:33	7:37	7:43	7:49	0:25
7	From Yard	7:00	7:06	7:13	7:19	7:23	7:28	7:33	7:39	7:44	7:47	7:49	7:57	8:03	8:07	8:13	8:19	To Yard
1	From Yard	7:30	7:36	7:43	7:49	7:53	7:58	8:03	8:09	8:14	8:17	8:19	8:27	8:33	8:37	8:43	8:49	To Yard
2	From Yard	8:00	8:06	8:13	8:19	8:23	8:28	8:33	8:39	8:44	8:47	8:49	8:57	9:03	9:07	9:13	9:19	0:40
6	From Yard	10:00	10:06	10:13	10:19	10:23	10:28	10:33	10:39	10:44	10:47	10:49	10:57	11:03	11:07	11:13	11:19	0:40
2	From Yard	12:00	12:06	12:13	12:19	12:23	12:28	12:33	12:39	12:44	12:47	12:49	12:57	13:03	13:07	13:13	13:19	0:40
6	From Yard	14:00	14:06	14:13	14:19	14:23	14:28	14:33	14:39	14:44	14:47	14:49	14:57	15:03	15:07	15:13	15:19	0:25
2	From Yard	16:00	16:06	16:13	16:19	16:23	16:28	16:33	16:39	16:44	16:47	16:49	16:57	17:03	17:07	17:13	17:19	0:25
4	From Yard	16:30	16:36	16:43	16:49	16:53	16:58	17:03	17:09	17:14	17:17	17:19	17:27	17:33	17:37	17:43	17:49	0:25
5	From Yard	17:00	17:06	17:13	17:19	17:23	17:28	17:33	17:39	17:44	17:47	17:49	17:57	18:03	18:07	18:13	18:19	To Yard
7	From Yard	17:30	17:36	17:43	17:49	17:53	17:58	18:03	18:09	18:14	18:17	18:19	18:27	18:33	18:37	18:43	18:49	To Yard
6	From Yard	18:00	18:06	18:13	18:19	18:23	18:28	18:33	18:39	18:44	18:47	18:49	18:57	19:03	19:07	19:13	19:19	To Yard
1	From Yard	18:30	18:36	18:43	18:49	18:53	18:58	19:03	19:09	19:14	19:17	19:19	19:27	19:33	19:37	19:43	19:49	To Yard
5	From Yard	20:30	20:36	20:43	20:49	20:53	20:58	21:03	21:09	21:14	21:17	21:19	21:27	21:33	21:37	21:43	21:49	To Yard

NORTHBOUND DIRECTION

Train No.	To From	Poinciana Blvd.	Kissimmee Amtrak	Osceola Pkwy.	Meadow Woods	Sand Lake SR 408	ORMC Amtrak	Church Street	Orlando LCS	Florida Hospital	Winter Park	Maitland	Altamonte Springs	Longwood SR 434	Lake Mary	Sanford Amtrak	DeBary	Layover
1	From Yard	5:45	5:51	5:56	6:01	6:07	6:14	6:17	6:19	6:24	6:30	6:36	6:41	6:45	6:51	6:58	7:04	0:25
2	From Yard	6:15	6:21	6:26	6:31	6:37	6:44	6:47	6:49	6:54	7:00	7:06	7:11	7:15	7:21	7:28	7:34	0:25
3	From Yard	6:45	6:51	6:56	7:01	7:07	7:14	7:17	7:19	7:24	7:30	7:36	7:41	7:45	7:51	7:58	8:04	To Yard
4	From Yard	7:15	7:21	7:26	7:31	7:37	7:44	7:47	7:49	7:54	8:00	8:06	8:11	8:15	8:21	8:28	8:34	To Yard
5	From Yard	7:45	7:51	7:56	8:01	8:07	8:14	8:17	8:19	8:24	8:30	8:36	8:41	8:45	8:51	8:58	9:04	To Yard
6	From Yard	8:15	8:21	8:26	8:31	8:37	8:44	8:47	8:49	8:54	9:00	9:06	9:11	9:15	9:21	9:28	9:34	To Yard
2	From Yard	10:00	10:06	10:11	10:16	10:22	10:29	10:32	10:34	10:39	10:45	10:51	10:56	11:00	11:06	11:13	11:19	0:40
6	From Yard	12:00	12:06	12:11	12:16	12:22	12:29	12:32	12:34	12:39	12:45	12:51	12:56	13:00	13:06	13:13	13:19	0:40
2	From Yard	14:00	14:06	14:11	14:16	14:22	14:29	14:32	14:34	14:39	14:45	14:51	14:56	15:00	15:06	15:13	15:19	0:40
6	From Yard	16:15	16:21	16:26	16:31	16:37	16:44	16:47	16:49	16:54	17:00	17:06	17:11	17:15	17:21	17:28	17:34	0:25
3	From Yard	16:45	16:51	16:56	17:01	17:07	17:14	17:17	17:19	17:24	17:30	17:36	17:41	17:45	17:51	17:58	18:04	To Yard
2	From Yard	17:45	17:51	17:56	18:01	18:07	18:14	18:17	18:19	18:24	18:30	18:36	18:41	18:45	18:51	18:58	19:04	To Yard
4	From Yard	18:15	18:21	18:26	18:31	18:37	18:44	18:47	18:49	18:54	19:00	19:06	19:11	19:15	19:21	19:28	19:34	To Yard
5	From Yard	18:45	18:51	18:56	19:01	19:07	19:14	19:17	19:19	19:24	19:30	19:36	19:41	19:45	19:51	19:58	20:04	To Yard
1	From Yard	20:00	20:06	20:11	20:16	20:22	20:29	20:32	20:34	20:39	20:45	20:51	20:56	21:00	21:06	21:13	21:19	To Yard

APPENDIX C  
FULL BUILD 2016 SCENARIO PRELIMINARY TRAIN SCHEDULES

SOUTHBOUND DIRECTION

Trail No.	To From	DelLand Amtrak	DeBary	Sanford Amtrak	Lake Mary	Longwood SR 434	Altamonte Springs	Maitland	Winter Park	Florida Hospital	Orlando LCS	Church Street	ORMC/ Amtrak	Sand Lakel SR 408	Meadow Woods	Osceola Pkwy.	Kissimmee Amtrak	Poinciana Blvd.	Layover	
5	From Yard	5:30	5:43	5:49	5:56	6:02	6:06	6:11	6:17	6:22	6:28	6:30	6:33	6:40	6:46	6:46	6:51	6:56	7:02	0:27
6	From Yard	6:00	6:13	6:19	6:26	6:32	6:36	6:41	6:47	6:52	6:58	7:00	7:03	7:10	7:16	7:16	7:21	7:26	7:32	0:27
7	From Yard	6:30	6:43	6:49	6:56	7:02	7:06	7:11	7:17	7:22	7:28	7:30	7:33	7:40	7:46	7:46	7:51	7:56	8:02	To Yard
8	From Yard	7:00	7:13	7:19	7:26	7:32	7:36	7:41	7:47	7:52	7:58	8:00	8:03	8:10	8:16	8:16	8:21	8:26	8:32	To Yard
1	From Yard	7:30	7:43	7:49	7:56	8:02	8:06	8:11	8:17	8:22	8:28	8:30	8:33	8:40	8:46	8:46	8:51	8:56	9:02	To Yard
2	From Yard	8:00	8:13	8:19	8:26	8:32	8:36	8:41	8:47	8:52	8:58	9:00	9:03	9:10	9:16	9:16	9:21	9:26	9:32	0:27
6	From Yard	10:00	10:13	10:19	10:26	10:32	10:36	10:41	10:47	10:52	10:58	11:00	11:03	11:10	11:16	11:16	11:21	11:26	11:32	0:27
2	From Yard	12:00	12:13	12:19	12:26	12:32	12:36	12:41	12:47	12:52	12:58	13:00	13:03	13:10	13:16	13:16	13:21	13:26	13:32	0:27
6	From Yard	14:00	14:13	14:19	14:26	14:32	14:36	14:41	14:47	14:52	14:58	15:00	15:03	15:10	15:16	15:16	15:21	15:26	15:32	0:27
2	From Yard	16:00	16:13	16:19	16:26	16:32	16:36	16:41	16:47	16:52	16:58	17:00	17:03	17:10	17:16	17:16	17:21	17:26	17:32	0:27
3	From Yard	16:30	16:43	16:49	16:56	17:02	17:06	17:11	17:17	17:22	17:28	17:30	17:33	17:40	17:46	17:46	17:51	17:56	18:02	To Yard
4	From Yard	17:00	17:13	17:19	17:26	17:32	17:36	17:41	17:47	17:52	17:58	18:00	18:03	18:10	18:16	18:16	18:21	18:26	18:32	To Yard
5	From Yard	17:30	17:43	17:49	17:56	18:02	18:06	18:11	18:17	18:22	18:28	18:30	18:33	18:40	18:46	18:46	18:51	18:56	19:02	To Yard
6	From Yard	18:00	18:13	18:19	18:26	18:32	18:36	18:41	18:47	18:52	18:58	19:00	19:03	19:10	19:16	19:16	19:21	19:26	19:32	To Yard
1	From Yard	18:30	18:43	18:49	18:56	19:02	19:06	19:11	19:17	19:22	19:28	19:30	19:33	19:40	19:46	19:46	19:51	19:56	20:02	To Yard
2	From Yard	20:00	20:13	20:19	20:26	20:32	20:36	20:41	20:47	20:52	20:58	21:00	21:03	21:10	21:16	21:16	21:21	21:26	21:32	To Yard

NORTHBOUND DIRECTION

To From	Poinciana Blvd.	Kissimmee Amtrak	Osceola Pkwy.	Meadow Woods	Sand Lakel SR 408	ORMC/ Amtrak	Church Street	Orlando LCS	Florida Hospital	Winter Park	Maitland	Altamonte Springs	Longwood SR 434	Lake Mary	Sanford Amtrak	DeBary	DelLand Amtrak	Layover	
From Yard	5:30	5:36	5:41	5:46	5:52	5:59	6:02	6:04	6:09	6:15	6:21	6:26	6:30	6:36	6:43	6:49	6:56	7:02	0:27
From Yard	6:00	6:06	6:11	6:16	6:22	6:29	6:32	6:34	6:39	6:45	6:51	6:56	7:00	7:06	7:13	7:19	7:26	7:32	0:27
From Yard	6:30	6:36	6:41	6:46	6:52	6:59	7:02	7:04	7:09	7:15	7:21	7:26	7:30	7:36	7:43	7:49	7:56	8:02	To Yard
From Yard	7:00	7:06	7:11	7:16	7:22	7:29	7:32	7:34	7:39	7:45	7:51	7:56	8:00	8:06	8:13	8:19	8:26	8:32	To Yard
From Yard	7:30	7:36	7:41	7:46	7:52	7:59	8:02	8:04	8:09	8:15	8:21	8:26	8:30	8:36	8:43	8:49	8:56	9:02	To Yard
From Yard	8:00	8:06	8:11	8:16	8:22	8:29	8:32	8:34	8:39	8:45	8:51	8:56	9:00	9:06	9:13	9:19	9:26	9:32	0:27
From Yard	10:00	10:06	10:11	10:16	10:22	10:29	10:32	10:34	10:39	10:45	10:51	10:56	11:00	11:06	11:13	11:19	11:26	11:32	0:27
From Yard	12:00	12:06	12:11	12:16	12:22	12:29	12:32	12:34	12:39	12:45	12:51	12:56	13:00	13:06	13:13	13:19	13:26	13:32	0:27
From Yard	14:00	14:06	14:11	14:16	14:22	14:29	14:32	14:34	14:39	14:45	14:51	14:56	15:00	15:06	15:13	15:19	15:26	15:32	0:27
From Yard	16:00	16:06	16:11	16:16	16:22	16:29	16:32	16:34	16:39	16:45	16:51	16:56	17:00	17:06	17:13	17:19	17:26	17:32	0:27
From Yard	16:30	16:36	16:41	16:46	16:52	16:59	17:02	17:04	17:09	17:15	17:21	17:26	17:30	17:36	17:43	17:49	18:02	18:08	To Yard
From Yard	17:00	17:06	17:11	17:16	17:22	17:29	17:32	17:34	17:39	17:45	17:51	17:56	18:00	18:06	18:13	18:19	18:32	18:38	To Yard
From Yard	17:30	17:36	17:41	17:46	17:52	17:59	18:02	18:04	18:09	18:15	18:21	18:26	18:30	18:36	18:43	18:49	19:02	19:08	To Yard
From Yard	18:00	18:06	18:11	18:16	18:22	18:29	18:32	18:34	18:39	18:45	18:51	18:56	19:00	19:06	19:13	19:19	19:32	19:38	To Yard
From Yard	18:30	18:36	18:41	18:46	18:52	18:59	19:02	19:04	19:09	19:15	19:21	19:26	19:30	19:36	19:43	19:49	20:02	20:08	To Yard
From Yard	20:30	20:36	20:41	20:46	20:52	20:59	21:02	21:04	21:09	21:15	21:21	21:26	21:30	21:36	21:43	21:49	22:02	22:08	To Yard

**Table 9 – Operating Requirements for Commuter Rail Scenarios**

<b>PARAMETER</b>	<b>IOS</b>	<b>LPA</b>	<b>FULL BUILD</b>
One-Way Run Time (min:sec)	56:48	79:33	92:50
Layover Time	18:12	25:27	27:10
Round-Trip Cycle Time (Peak)	150:00	210:00	240:00
Frequency (peak/mid/eve)	30/120/120	30/120/120	30/120/120
Peak Trainsets	5	7	8
Peal Locomotives	5	7	8
Peak Passenger Cars	10	14	16
Standby Passenger Cars	4	4	4
Fleet Passenger Cars	14	18	20
Annual Revenue Train-Hours	10,400	14,600	16,600
Annual Revenue Car-Miles	525,000	810,000	1,006,000
Route Miles	31.6	48.6	60.8
Stations	12	16	17
Daily Revenue Train Trips	32	32	32