

2.6 Dry Bulk, Break-Bulk, and Yachts and Vehicles Cargo Market Assessment

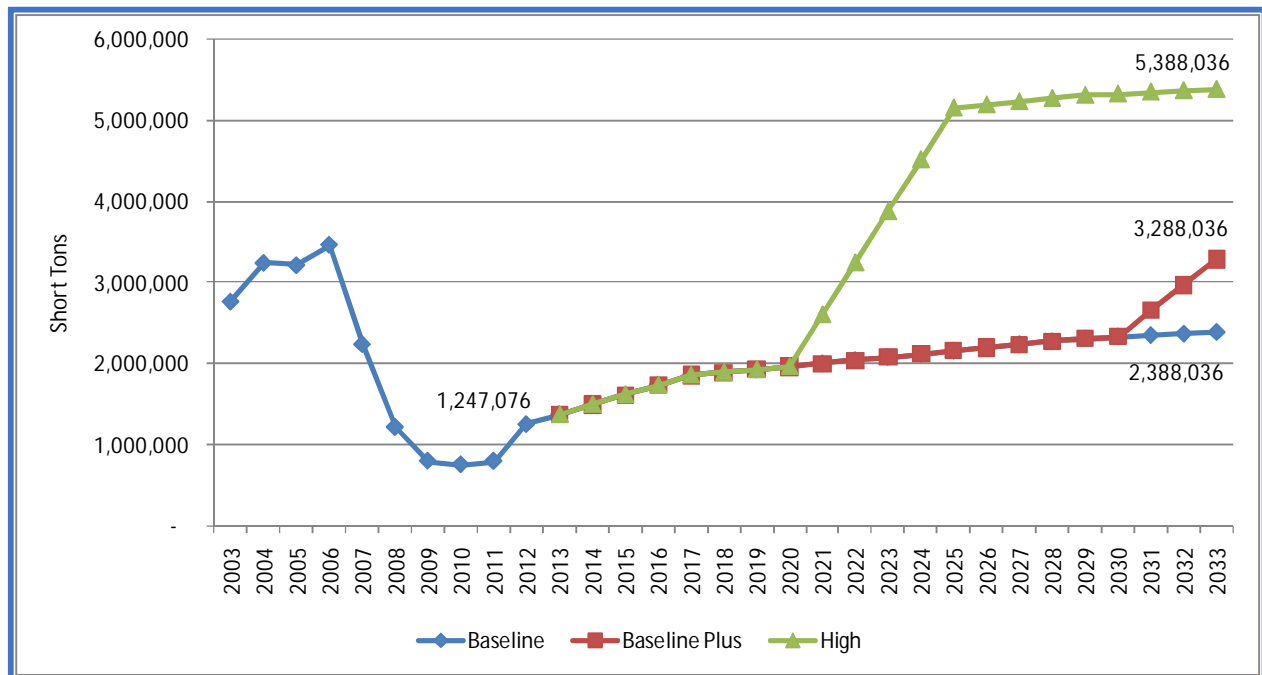
2.6.1 Forecast Summary

Annual cargo demand for dry bulk, break-bulk, yachts and vehicles was forecast under three scenarios (see Figure 2.6-1).

- **Baseline.** -- fully consistent with the U.S. Army Corps of Engineers (USACE) *Harbor Deepening Study*, reflecting no change in Port Everglades' commodity trade-lane market shares with respect to competing South Atlantic ports (Charleston, Savannah, Jacksonville, Palm Beach, and Miami).
- **Baseline Plus.** -- adds a new import terminal for crushed rock to replace a portion of Lake Belt limestone production. The assumption is that Lake Belt mines operate through 2040 (their estimated lifespan), with imports through Port Everglades beginning in 2030 and ramping up gradually.
- **High.** -- adds a new import terminal for crushed rock to replace a portion of Lake Belt limestone production. The assumption is that Lake Belt mines are not permitted beyond 2019-2023. Imports through Port Everglades begin in 2020 and ramp up rapidly.

Unlike the container forecast, these commodities would not be significantly impacted by major port construction between FY 2013 and FY 2016.

**Figure 2.6-1
DRY BULK, BREAK-BULK, YACHTS AND VEHICLES FORECAST SUMMARY
(SHORT TONS)**



For these commodity groups, Port Everglades' volumes peaked at around 3.5 million tons in FY 2006. With the recession, volumes dropped to less than 1 million tons between FY 2009 and FY 2011. Much of the tonnage is in construction-related commodities (cement, steel rebar) and expensive consumer durable goods (yachts and vehicles), where demand tends to be cyclical with general economic conditions.

Under the Baseline forecast, demand recovers to nearly 2 million tons by FY 2017, and grows thereafter at a conservative rate of 1.6 percent per year, reaching nearly 2.5 million tons by FY 2033. To this figure, the Baseline-Plus forecast adds 0.9 million tons of import rock in FY 2033, while the High forecast adds 3.0 million tons of import rock in FY 2033.

2.6.2 Methodology

The analysis was designed to produce 20-year forecasts for dry bulk, break-bulk, yachts and vehicles. The underlying goals were to:

- Benchmark overall growth targets, by year, through FY 2033 (in short tons).
- Identify key markets, opportunities, constraints, and plan responses.
- Point to opportunities and key strategic decisions to be specifically addressed in Phase II of the Master/Vision Plan.

As with the container forecast, the key steps included: data development; scenario formulation; stakeholder interviews and research; and statistical projections. Unlike the container forecast, demand for these commodity types is not expected to vary based on factors such as channel depth, carrier strategies, etc., so sensitivity testing of the resulting forecasts was not performed.

2.6.3 Baseline Forecast

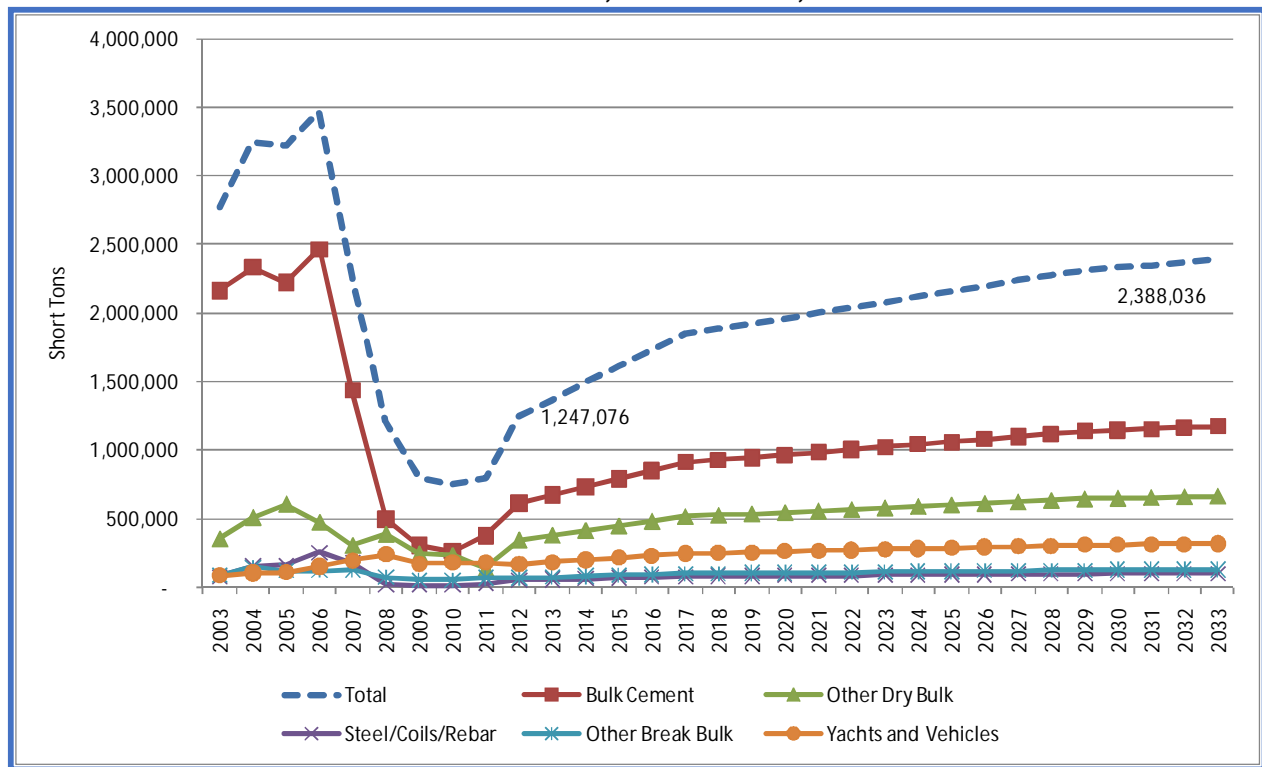
The Baseline forecast is derived from, and fully consistent, with the USACE *Harbor Deepening Study*. It assumes no change in Port Everglades' commodity trade-lane market shares with respect to competing South Atlantic ports (see Table 2.6-1 and Figure 2.6-2).

The USACE forecast, expressed in metric tons, combines the various commodity types -- cement, crushed rock, steel/rebar, vehicles and yachts, etc. These commodities tend to co-vary, since they are all tied to construction activity and gross domestic product (GDP). The USACE's first forecast year is FY 2017. Their expected growth rate for these commodities reflects an average 1.6 percent compound annual growth rate. Between FY 2012 and FY 2017, there is faster growth, reflecting a modest rebound from the very depressed volumes experienced during the recession; including this rebound, the average growth rate is 3.1 percent between 2012 and 2033. Historically, these have been very cyclical commodities -- especially cement, rock, and steel/rebar -- so yearly variations from these averages must be expected.

**Table 2.6-1
BASELINE FORECAST – DRY BULK, BREAK-BULK, YACHTS AND VEHICLES**

	Port Everglades Volume (in Short Tons)						Corps Forecast (in Metric Tons)
	Total	Bulk Cement	Other Dry Bulk	Steel/Coils/ Rebar	Other Break Bulk	Yachts and Vehicles	
2003	2,765,789	2,164,610	354,444	76,471	84,724	85,540	
2004	3,244,248	2,333,142	509,891	150,951	146,727	103,537	
2005	3,216,998	2,222,492	607,063	159,353	119,786	108,304	
2006	3,469,922	2,465,753	475,084	256,271	120,264	152,550	
2007	2,238,345	1,432,837	307,825	175,361	126,940	195,382	
2008	1,212,573	494,054	387,383	17,660	73,347	240,129	
2009	793,538	06,727	246,988	15,523	51,939	172,361	
2010	749,407	264,211	234,068	15,192	54,768	181,168	
2011	792,146	375,050	141,189	27,180	67,741	180,986	
2012	1,247,076	613,051	346,976	53,055	67,757	166,237	
2013	1,368,342	672,664	380,716	58,214	74,346	182,402	
2014	1,489,608	732,277	414,456	63,373	80,934	198,567	
2015	1,610,874	791,891	448,196	68,532	87,523	214,732	
2016	1,732,139	851,504	481,936	73,691	94,112	230,897	
2017	1,853,405	911,117	515,676	78,850	100,701	247,062	1,681,381
2018	1,888,587	928,412	525,465	80,347	102,612	251,751	1,713,297
2019	1,923,769	945,707	535,253	81,844	104,524	256,441	1,745,214
2020	1,958,950	963,002	545,042	83,341	106,435	261,131	1,777,130
2021	1,998,752	982,568	556,116	85,034	108,598	266,436	1,813,237
2022	2,038,553	1,002,134	567,190	86,727	110,760	271,742	1,849,344
2023	2,078,355	1,021,700	578,264	88,421	112,923	277,048	1,885,452
2024	2,118,156	1,041,266	589,338	90,114	115,085	282,353	1,921,559
2025	2,157,957	1,060,832	600,412	91,807	117,248	287,659	1,957,666
2026	2,196,639	1,079,847	611,175	93,453	119,349	292,815	1,992,758
2027	2,235,321	1,098,863	621,937	95,098	121,451	297,971	2,027,849
2028	2,274,003	1,117,879	632,699	96,744	123,553	303,128	2,062,941
2029	2,312,684	1,136,894	643,462	98,390	125,654	308,284	2,098,032
2030	2,331,186	1,145,989	648,610	99,177	126,660	310,750	2,114,816
2031	2,350,136	1,155,305	653,882	99,983	127,689	313,276	2,132,007
2032	2,369,086	1,164,621	659,155	100,789	128,719	315,803	2,149,199
2033	2,388,036	1,173,937	664,427	101,595	129,748	318,329	2,166,390
2034							2,183,582
2035							2,200,773
2012- 2017	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	
2017- 2033	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	
2012- 2033	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	

**Figure 2.6-2
BASELINE FORECAST – DRY BULK, BREAK-BULK, YACHTS AND VEHICLES**



2.6.4 Baseline-Plus Forecast

The Baseline-Plus forecast starts with the Baseline forecast, and adds a new import terminal for crushed rock.

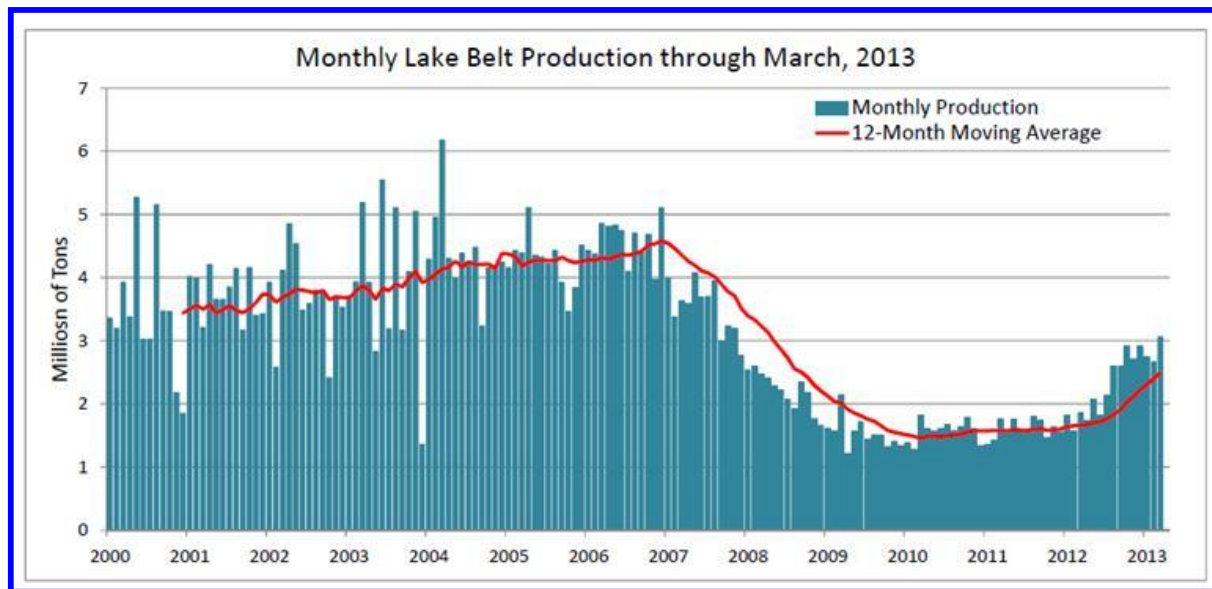
Currently, South Florida is supplied with limestone by mines in the “Lake Belt” region west of Miami. Several years ago, it was thought that all mining activity might be halted; however, between 2009 and 2013, new mining permits were issued. Today, there are eleven active permits, covering extraction activity from nearly 20,000 acres (see Table 2.6-2). These permits are set to expire between 2019 and 2023. The Florida Department of Environmental Protection (FDEP) estimates the lifespan of eight of these mines at 30 years, two smaller mines at 20 years, and one smaller mine at 10 years. Extraction beyond 2019-2023 will, however, require new permits to be issued, not only by FDEP, but also by the USACE and local land use agencies.

**Table 2.6-2
ACTIVE FDEP LAKE BELT MINING PERMITS**

Project	Permit Issued	Construction Phase Expiration	Project Acres	Mined Depth (ft)	Estimated Life (years)
APAC -- Southeast Quarry	11/20/2009	11/20/2019	1,235	80	30
CEMEX -- FEC Quarry	10/27/2009	10/27/2019	4,325	85	30
Florida Rock -- Miami Quarry	11/20/2009	11/20/2019	2,309	80	30
Kendall Properties -- Krome Quarry	3/15/2013	3/15/2023	867	55	20
Lowell Dunn -- 58th St. Pit	6/11/2013	6/11/2023	99	75	10
Miami Dade -- Opa Locka West Airport Mine	10/21/2010	10/21/2020	414	83	20
Sawgrass Rock Quarry	8/14/2009	8/14/2019	179	n.a.	n.a.
CEMEX -- SCL Quarry	10/27/2009	10/27/2019	1,892	70	30
Tarmac America -- Pennusco Quarry	11/2/2009	11/2/2019	3491	85	30
White Rock Quarries -- Main	9/21/2009	9/21/2019	4,354	100	30
White Rock Quarries -- South	11/2/2009	11/2/2019	395	80	20

Figure 2.6-3 shows the historic Lake Belt production.

**Figure 2.6-3
HISTORIC LAKE BELT PRODUCTION**



Since 2000, Lake Belt production has varied tremendously, from a high of around 55 million tons per year to a low of around 20 million tons per year. The largest Lake Belt permit holder controls around 30 percent of the acreage, corresponding to a minimum volume of around 6 million tons per year.

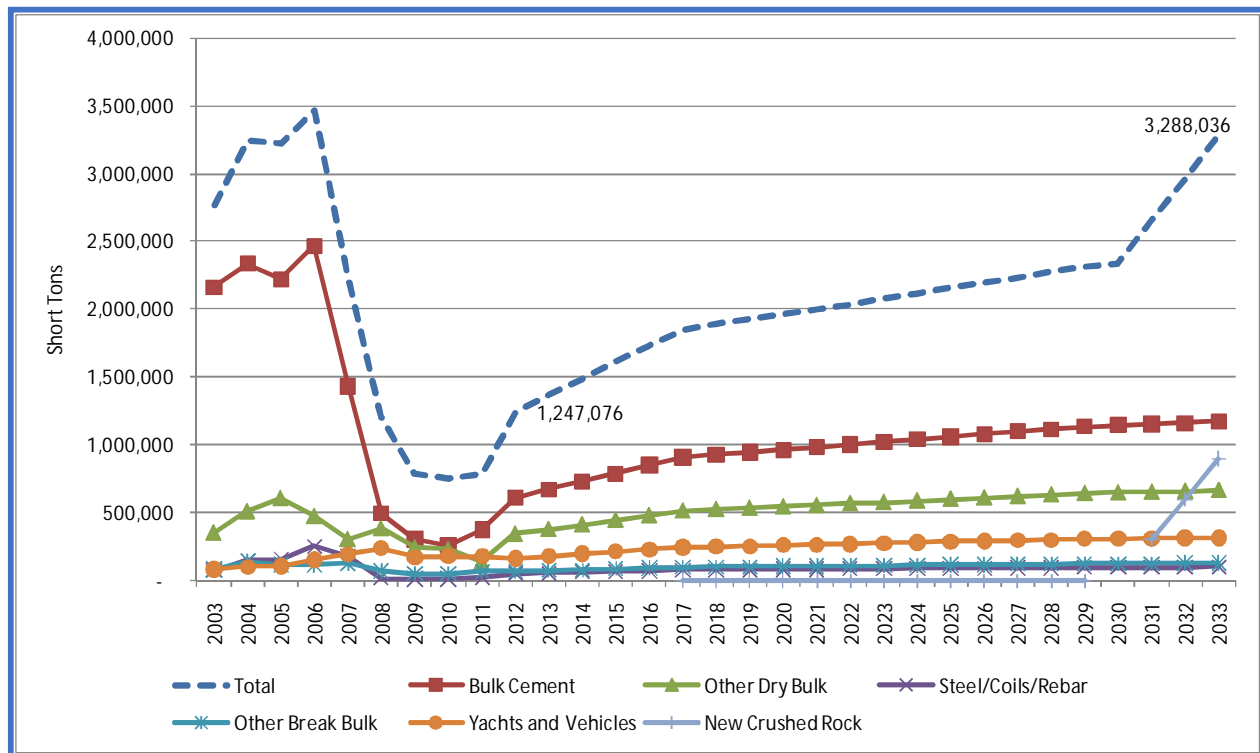
The Baseline-Plus forecast assumes that FDEP has correctly estimated the lifespan of Lake Belt mines, and that future permits are issued to allow continued extraction until the mines are depleted (between 2039 and 2043). As a market target, a new rock import terminal at Port Everglades would aim to meet at least 50 percent of the annual production associated with the largest permit holder (3 million tons per year) in 2040, recognizing that actual demand could be higher or lower depending on the particular operator, prevailing market conditions, and alternative supply chains. The import terminal would begin operation in 2031, ramping up volume gradually to the year 2040. For purposes of the FY 2012-2033 forecast period, the first few years of ramping-up activity are shown, but not subsequent years (see Table 2.6-3 and Figure 2.6-4)

The Baseline-Plus forecast also assumes that rail service would be available for the new rock import facility. Without rail service, such a facility is unlikely to be viable.

Table 2.6-3
BASELINE-PLUS FORECAST – DRY BULK, BREAK-BULK, YACHTS AND VEHICLES

	Port Everglades Volume (in Short Tons)						Corps Forecast (in Metric Tons)
	Total	Bulk Cement	Other Dry Bulk	Steel/Coils/ Rebar	Other Break Bulk	Yachts and Vehicles	
2003	2,765,789	2,164,610	354,444	76,471	84,724	85,540	
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2006	3,469,922	2,465,753	475,084	256,271	120,264	152,550	
2007	2,238,345	1,432,837	307,825	175,361	126,940	195,382	
2008	1,212,573	494,054	387,383	17,660	73,347	240,129	
2009	793,538	306,727	246,988	15,523	51,939	172,361	
2010	749,407	264,211	234,068	15,192	54,768	181,168	
2011	792,146	375,050	141,189	27,180	67,741	180,986	
2012	1,247,076	613,051	346,976	53,055	67,757	166,237	
2013	1,368,342	672,664	380,716	58,214	74,346	182,402	
2014	1,489,608	732,277	414,456	63,373	80,934	198,567	
2015	1,610,874	791,891	448,196	68,532	87,523	214,732	
2016	1,732,139	851,504	481,936	73,691	94,112	230,897	
2017	1,853,405	911,117	515,676	78,850	100,701	247,062	- 1,681,381
2018	1,888,587	928,412	525,465	80,347	102,612	251,751	- 1,713,297
2019	1,923,769	945,707	535,253	81,844	104,524	256,441	- 1,745,214
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2022	2,038,553	1,002,134	567,190	86,727	110,760	271,742	- 1,849,344
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2024	2,118,156	1,041,266	589,338	90,114	115,085	282,353	- 1,921,559
2025	2,157,957	1,060,832	600,412	91,807	117,248	287,659	- 1,957,666
2026	2,196,639	1,079,847	611,175	93,453	119,349	292,815	- 1,992,758
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2028	2,274,003	1,117,879	632,699	96,744	123,553	303,128	- 2,062,941
2029	2,312,684	1,136,894	643,462	98,390	125,654	308,284	- 2,098,032
2030	2,331,186	1,145,989	648,610	99,177	126,660	310,750	2,114,816
2031	2,650,136	1,155,305	653,882	99,983	127,689	313,276	300,000 2,132,007
2032	2,969,086	1,164,621	659,155	100,789	128,719	315,803	600,000 2,149,199
2033	3,288,036	1,173,937	664,427	101,595	129,748	318,329	900,000 2,166,390
2034							2,183,582
2035							2,200,773
2012-							
2017	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	
2017-							
2033	3.6%	1.6%	1.6%	1.6%	1.6%	1.6%	
2012-							
2033	4.7%	3.1%	3.1%	3.1%	3.1%	3.1%	

Figure 2.6-4
BASELINE-PLUS FORECAST – DRY BULK, BREAK-BULK, YACHTS AND VEHICLES



2.6.5 High Forecast

Like the Baseline-Plus forecast, the High forecast starts with the Baseline forecast, and adds a new import terminal for crushed rock. It assumes, however, that no additional mining permits are issued beyond 2019-2023. In this scenario, all Lake Belt production has to be replaced through other means.

As a market target, a new rock import terminal at Port Everglades would aim to meet at least 50 percent of the annual production associated with the largest permit holder (3 million tons per year) by FY 2025, recognizing that actual demand could be higher or lower depending on the particular operator, prevailing market conditions, and alternative supply chains. The import terminal would begin operation in FY 2021, ramping up rapidly to full operation by FY 2025. The High forecast also assumes that rail service would be available for the new rock import facility.

Table 2.6-4 and Figure 2.6-5 show the High forecast for the non-containerized commodities.

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Table 2.6-4 and Figure 2.6-5 show the High forecast for the non-containerized commodities.

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HIGH FORECAST – DRY BULK, BREAK-BULK, YACHTS AND VEHICLES**

	Port Everglades Volume (in Short Tons)							Corps Forecast (in Metric Tons)
	Total	Bulk Cement	Other Dry Bulk	Steel/Co ils/ Rebar	Other Break Bulk	Yachts and Vehicles	New Crushed Rock	
2003	2,765,789	2,164,610	354,444	76,471	84,724	85,540		
2004	3,244,248	2,333,142	509,891	150,951	146,727	103,537		
2005	3,216,998	2,222,492	607,063	159,353	119,786	108,304		
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2018	1,888,587	928,412	525,465	80,347	102,612	251,751		1,713,297
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2020	1,958,950	963,002	545,042	83,341	106,435	261,131		1,777,130
2021	2,598,752	982,568	556,116	85,034	108,598	266,436	600,000	1,813,237
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2025	5,157,957	1,060,832	600,412	91,807	117,248	287,659	3,000,000	1,957,666
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2034								2,183,582
2035								2,200,773
2012-								
2017-	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%		
2017-								
2033	6.9%	1.6%	1.6%	1.6%	1.6%	1.6%		
2012-								
2033	7.2%	3.1%	3.1%	3.1%	3.1%	3.1%		

**Figure 2.6-5
HIGH FORECAST – DRY BULK, BREAK-BULK, YACHTS AND VEHICLES**

