

Key Findings of the FDOT “Strategic Aggregates Study”
Final Report, March 12, 2007
(Underlines added for emphasis)

Industry Overview

“The economy of Florida consumes an estimated 143 million tons of aggregate materials each year. Approximately, 120 million tons are produced from mines in the state, 8 million tons are imported from U.S. domestic sources, and 5 million tons are imported internationally. Florida is successful in recycling and 10 millions tons are re-used each year. The Miami Limestone formation found along southeast coast in the Lake Belt Region of Miami-Dade County is the hardest and most durable geologic formation available in the state. Approximately 55 million tons of rock from this area is processed in to aggregate products each year and provides the main supply source for the entire construction industry. There are five “mega-mines” in the Lake Belt that provide this majority of this material. These mega-mines are among the top ten in production in the country: the first and second ranked mines are in the Lake Belt.”

“If projections hold, construction of new homes and buildings may require 86 million tons of crushed stone -- almost half of those materials will be used to meet the housing needs of a rapidly expanding population. Forty-two million tons of rock will go to construction of roads, bridges, runways, and other infrastructure, making the Florida Department of Transportation (FDOT) the largest single contractor/user of crushed stone resources in the state.”

“Crushed stone in Florida is produced from limestone, which is mined or extracted from naturally occurring deposits found in 22 counties.”

“At least five other limestone formations and a significant area of quality sand are found at the surface around the state in defined regions. They provide another 65 million tons from more than 100 smaller and geographically dispersed mines.”

“Florida limestone formations outside the Lake Belt are generally not as high in quality. Both large and small land developments are over-running the lands where limestone and sand deposits are found. Local land use decisions fueled by homeowner and neighbor’s complaints have made planning and permitting new mines extremely costly or impossible.”

“The FDOT database for mines that participate in certification testing was used to identify and evaluate in detail over 100 limestone and sand mines statewide. These mines were ranked by production output...”

“Florida has six mega-mines that are ranked in the top 20 in the country for crushed stone materials. These mines include: ...

Rinker’s Fort Myers Mine Complex – Ranked #8

“These mines serve large market areas and produce more aggregates than can be used locally so the products are exported out of the immediate area by truck and rail.

“Crushed stone is usually not a large part of the cost of building. In 2004, crushed stone (at mine prices) accounted for only about 1.3 percent of the value of construction done in Florida. However, this varies considerably by type. For road construction, crushed stone averages 6.8 percent of the total cost. For housing in 2004, it ranged from 0.4 for multi-family to 0.7 percent for single-family homes.”

Assessment of Lake Belt Alternatives

Overview

“The consolidated and harder limestone formations that underlay Florida are the source of the crushed stone materials used in road building and construction. Significant deposits may be found in six counties. Limerock mines are operated in 22 counties; most of these mines produce limerock base, not high quality aggregates.”

“The economically accessible limestone and sand deposits that remain un-mined should be considered significant or strategic resource reserves for future mining. These reserves are found in six multi-county clusters, which are designated here as Materials Resource Planning Areas for discussion purposes; these counties are:

Miami-Dade and Broward;
Collier and Lee;
Palm Beach;
Lake and Polk (sand only);
Hernando, Sumter and Citrus; and,
Taylor and Dixie Counties.”

“With the exceptions of a few mines 40 miles north of Tampa and one in Fort Myers, rock found in most mines throughout the rest of Florida is too soft or otherwise unsuitable for aggregate applications.”

Miami Dade and Broward Limestone Resource Area

“mining companies have identified and secured reserves in the Lake-Belt Region for 30-40 years at present removal rates. The environmental planning and regulatory permitting have been underway in the Lake Belt for more than 30 years for a mining area of 56 square miles in which three mega-mines operate and seven other mines are permitted.”

Collier and Lee Limestone Resource Area

The Rinker Mine Complex

“The mega-mine complex in Lee County has seven years of remaining capacity and when it closes, the aggregates that it supplies to all of southwest Florida will need to be trucked in from other locations at a much higher price.”

“The Rinker mine complex will exhaust reserves by 2015. New mines to replace the mega-mine capacities of this facility will be difficult, if not impossible to permit in this area. When the mine reserves are gone, aggregates will be imported at greater expense.”

“Rinker’s Fort Myers Mine Complex does not have rail access but distributes to a six-county area by truck.”

“The Rinker Mine, a mega-mine complex in south-central Lee County, has reserves through 2014 and development of surrounding land has blocked any future expansions, Figure 30. The Rinker Mine is significant for this area because it is able to produce certified aggregates for FDOT use while other mines produce limerock and some commercial aggregates. The original planners for the Rinker Mine located it in an area of unusually hard rock within the Tamiami Limestone. For the most part, the Tamiami Limestone is soft throughout its range, and the only crushed stone materials that can be made from this resource are limerock and fill.”

“As the reserves from the Rinker Mine complex on Alico Road in Lee County are exhausted, new sources of aggregates will need to be imported into the area by truck from rail terminals outside the local area.”

“The Rinker mega-mine complex in Lee County is the closest producer of durable aggregates and would be a replacement for Lake Belt in the short term. The reserves in Lee County would rapidly be depleted and expand the crushed stone supply problem across all of South Florida.”

“The biggest producer outside of the Lake Belt, according to the USGS, is the Rinker Quarry Complex in Lee County. This is a megamine and the seventh biggest stone producer in the United States in 2004, which implies it produced more than 5.5 million tons that year. However, it only has enough reserves to continue producing until 2014, and expansion is being blocked by objections from residents of nearby communities.”

Other Lee and Collier Aggregate Mining Resources

Florida’s 100 largest aggregate mines include the following Lee County mines ranked as follows:

Rank	Lee County Aggregate Mine
4	Rinker’s Fort Myers Mine Complex
7	Florida Rock’s Alico Road Mine
48	Bonita Grand Bonita Farms 1 and 2
51	RMC Cemex Mine
60	Youngquist Bros. Corkscrew Woods Sand Mine
70	Westwind Corkscrew Mine

“The backcountry area east of the Interstate 75 corridor produces 5.5 million tons of crushed stone materials from Rinker’s mega-mine off Alico Road while other limestone mines contribute several million more tons of base materials for construction in the area.”

Lee, which is the 22nd fastest growing county in the United States in 2004-2005, and

the City of Bonita Springs in Collier govern portions of a 96,000 acre swath of upland, wetlands, and environmentally sensitive areas designated as the "Density Reduction / Groundwater Resource" (DR/GR) in 1989 at the direction of state regulators. Development within the DR/GR is limited to 1 to 10 housing units per acre and agricultural and mining operations, Figure 25.

This special land use category, while intended to protect groundwater resources for the region, created a de facto mining district in Lee County similar to the Lake Belt area in Miami-Dade County, albeit without the comprehensive plan to provide for the mitigation of wetlands."

"A federal court judge revoked a permit for a 6,000 acre mine site in Lee County in 2004; in a case similar to the Lake Belt decision, the judge ruled that the U.S. Army Corps of Engineers had not adequately considered habitat issues related to the Florida panther."

"The limestone resources in Collier and Lee Counties are in the Tamiami Limestone which is generally softer and less durable than the Miami Limestone found in the Lake Belt. Hard and durable resources have been found and exploited in both counties; however, but the available reserves are dwindling and mine sites may be expected to be restricted by land use and environmental plans.

Both counties are experiencing rapid land development; the remaining limestone reserves are literally being built over."

"The mines that provided crushed stone materials in this area over the past 40 years are rapidly converting to lakefront residential communities. Smaller mines currently operating in this region will also be developed for home sites mine reclamation is completed."

"The Tamiami Limestone is found at or near the surface in east central Collier County beneath lands managed for protection of the Florida Panther and beneath lands of the Big Cypress National Preserve, the Fakahatchee Strand State Preserve managed to protect the Everglades watershed."

Levy, Hernando, Sumter, and Citrus Limestone Resource

"The Hernando, Sumter, and Citrus County area has reserves of durable rock from the Suwannee, Ocala and Avon Park Limestone formations but rapidly sprawling rural development that have created permitting and land use conflicts as new mines are planned."

"Several regional supply mines are operating in this area with truck hauling to the Orlando and Tampa markets. However, with rail improvements, highly efficient mega-mines could be developed in the next several decades."

"Limestone reserves are known in this area and could be a significant source for aggregates in the future; however, the rapidly changing demographics of this three-county area make mine siting and development a significant challenge for mining companies."

Taylor and Dixie Resource Area

“The Taylor and Dixie County Resource Area is underlain by the Suwannee Limestone and the Ocala Limestone; the overburden is generally shallow.”

“The Suwannee Limestone can be expected to occur in the upper 0-100+ feet of the area along Highway 98 in Taylor County. Mining and reconnaissance core drilling have shown that portions of the formation are dolomitized – a naturally occurring chemical substitution of magnesium for calcium in the limestone, which makes the rock more durable -- and in other areas are too soft to consistently meet acceptance tests. This area has high potential as a limestone resource area because of the presence of hard rock and the rural and undeveloped character of the area. The majority of the lands that would be potentially available for mining are in private forest management at this time.”

“The Florida Geological Survey, Department of Environmental Protection, in partnership with the U.S. Geological Survey will be mapping this area over the next two years. The data should provide more details on the quality and the areal extent of both the Suwannee and Ocala Limestone formations in Taylor and Dixie Counties”

“If the reserves are present in this area, then a “Lake Belt North” scenario could be developed to include several mega-mines.”

“Taylor County is one of the few places in Florida with mineral resources that are potentially of comparable quality to the Lake Belt and has deposits with characteristics making them viable for large scale, highly efficient production.”

“To replace the Lake Belt, new mine capacity in Taylor County would have to be large scale (mega-scale), so that unit production costs would be low enough to compensate for the remoteness of the mines, and returns high enough to finance an extensive rail infrastructure to get the crushed stone to consumers.”