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Special report: The incinerator that may burn muni investors

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By Lisa Lambert

HARRISBURG, Pennsylvania (Reuters) - The story of how Pennsylvania's capital city Harrisburg has lurched toward the precipice of financial ruin is a cuckoo tale involving one man's vision of creating a hub for museum lovers, a possible FBI investigation, and a $45,000 tomahawk that may or may not have been owned by Chief Crazy Horse.

But if this historic city of nearly 50,000 does end up defaulting on its debt -- a move that would send shockwaves through the $2.8 trillion municipal bond market -- most of the blame can be placed squarely on a single incinerator.

A financing scheme to fund its state-of-the-art trash-burning plant has left the 150-year-old Harrisburg scrambling to pay $68 million of interest this year. The payments exceed the annual city budget by some $3 million and the city council has recently begun to explore a possible bankruptcy filing, an event that would cast a shadow far beyond the Keystone state.

Municipal bankruptcies are extremely rare. The tax-exempt municipal bond market, where states, counties, cities and towns borrow money to pay for roads, schools, bridges and hospitals, is generally considered a safe investment with a far-lower default rate than the corporate bond market.

As the recession has continued to grind away at state and local government revenue, however, fears of a spike in defaults have risen, unsettling investors and shining an unwelcome spotlight on Harrisburg's financial woes.

The Harrisburg Authority, a municipal entity dedicated to building and financing public works such as sewers, missed a $425,282 payment due May 1 on some of its $282 million of incinerator debt because its reserve fund is depleted.

The city, the surrounding Dauphin County and bond insurance company Assured Guaranty Municipal Corp back some of the authority's debt and Assured made the May payment. But that still leaves Harrisburg residents on the hook for a large part of the costs of the bonds.

Adding to the financial morass is Harrisburg's long-serving former mayor, Stephen Reed, who dreamed of bolstering the area's economy by acquiring relics from the American West. He acknowledges that he directed funds from the authority and toward his vision of turning the city into an oasis of themed museums.

It hasn't worked out that way.

LIVING UNDER A CLOUD

To understand how a lone incinerator could create such a burning financial crisis, go back to 2003. That year, the federal government called for the plant to be shut down -- it was releasing dioxin, which is linked to cancer and birth defects. The trash burner had also raised the ire of activists, who pointed out that some of the area's poorest families lived directly under its clouds.

In response, the Harrisburg Authority revamped the nearly 40-year-old incinerator. Called the "Harrisburg Resource Recovery Facility," the fixed-up plant reopened in 2008 and was expected to burn more cleanly, while raising cash from trash collected across Dauphin County. There are 87 such waste-to-energy plants in the United States and many, including Harrisburg's, also harvest ferrous metals from the trash to sell, bringing in much-needed revenue.

The authority's financing for the incinerator was a Rube Goldberg contraption. According to data supplied by Harrisburg Controller Dan Miller, the authority issued 11 sets of bonds to build, refinance, expand or repair the incinerator between 1969 and 2003. The largest was $125 million in 2003.

Half of this year's scheduled payments, $34 million, is supposed to go to Bear Stearns, now a part of JP Morgan Chase, for a working capital loan on the retrofitted incinerator. But it is another loan that has many people confused.

The authority did not issue a performance bond, a type of insurance on the contractor finishing work on a project. As a result, it was caught short when the contractor pulled out. Citizens and officials want to know why such a standard bond was never issued.

The authority had to turn to Covanta Energy, the new operator, to finish the work and borrowed nearly $22 million from the company. According to a Covanta filing, the company authorized a loan of up to $25.5 million.

The Covanta filing said that $19.8 million of Harrisburg's debt remains outstanding and that the city is negotiating forbearance for a

Harrisburg and other stakeholders to maintain our position in the project and to protect the recovery of our advance."

WANT TO SWAP?

Then there are the swaps.

Harrisburg is one of a multitude of municipalities in Pennsylvania that purchased swaps to hedge against interest rate risk.

The Harrisburg Authority entered into three swaps for its 2003 bonds in the hopes of lowering net interest costs on the debt. Two swaps mature by 2013 and one will run until 2033, according to the authority. Beginning in 2005, the authority began making payments on the agreements it had made with the Royal Bank of Canada.

Typically, if an issuer cannot make a payment the counterparty is free to end the swap and issuers pay steep termination fees. The Harrisburg Authority put guaranties on its swap payments.

As a result, if it could not make a scheduled swap payment, then the city would. If the city could not, then Dauphin County would. That's what happened last summer, and the county is suing the city and the authority to recoup $775,652.93 for a June 1, 2009 swap payment.

Swaps, and their hefty termination fees, are currently under the regulatory microscope as the economic recession makes cash scarce for state and local governments.

Pennsylvania's auditor general has launched a campaign to convince local governments to avoid swaps, or to end current agreements, and the state legislature is looking into banning them altogether. Last year, many of the state's school districts, which had been desperate for cash, were burned by swaps that included large termination fees that are, as the Auditor General Jack Wagner put it, "lining pockets on Wall Street."

The U.S. Congress is also mulling new disclosure and fiduciary responsibility requirements for swaps and other financial instruments that cities and states use, but don't always understand. And for more than two years, since the bond insurance industry melted down and the credit market froze, House Financial Services Committee Chairman Barney Frank has proposed legislation to create safeguards for municipal bond issuers.

Still, few of those protective measures have yet become law and the reality is that many financial instruments are puzzling for those whose feet never tread on Wall Street.

"Finance officers may yell at me, but the truth is that they didn't go to Wharton," said Christopher "Kit" Taylor, who was head of the Municipal Securities Rulemaking Board (MSRB) for decades until 2007. He was referring to the University of Pennsylvania's prestigious business school.

THE MUSEUM DREAM

Alongside that tomahawk, wagon wheels, rifles, saddles, Indian effigies, photographs, furniture and a stuffed buffalo have all been gathered in a Harrisburg brick warehouse to fill a museum that was never built. The artifacts, together with thousands of others ranging from a Civil War machine gun to an ancient Sumerian necklace, were purchased by Reed when he was mayor, as part of his dream of turning the former industrial town into a museum hub.

The museum featuring Western memorabilia would commemorate the city's role in America's westward migration, even though Harrisburg, which runs along the Susquehanna River just off the Appalachian Trail, is located more than 1,000 miles away from the Alamo and other iconic landmarks of the Old West.

Needing cash, the city has only been able to sell a small portion of the artifacts. A Dallas auction house recently took just 850 items, suggesting the remainders -- the vast majority of the total collection -- have little value. The city did establish a small National Civil War Museum, ringed by a largely empty parking lot on a hill, which must compete with a more popular museum nearby at the famous Civil War battleground of Gettysburg.

Reed, who lost a re-election battle in November after 28 years in office, said a total of $15 million was spent on the artifacts. The money came from a special projects fund supported by fees earned on bonds issued by the Harrisburg Authority for capital projects. Reed contends that none of what he spent was related to the incinerator bonds.

Eric Papenfuse, a former member of the authority's board, says those numbers are wrong. Papenfuse runs his Midtown Scholar used book store and coffee house in a remodeled movie theater across from the Broad Street Market, where members of the Pennsylvania Dutch community sell meats, produce and pastries.

Papenfuse contends at least $30 million was spent on the artifacts, which should never have been purchased with funds from an organization whose mission is to improve public infrastructure.

"This entire thing was the wrong spending of public funds," said Papenfuse, who ran unsuccessfully for city council last November.

Reed confirmed that larger items were collected from vendors around western states by his aide John Levenda, who rented a truck and was sometimes accompanied by a uniformed Harrisburg policeman.

He argued this had saved the city "considerable sums" that would have been spent on shipping and packaging, according to a September 7, 2004 letter from the mayor to the authority that was published by Papenfuse during his election campaign.

Alarmed by the spending, Papenfuse contacted the Federal Bureau of Investigation, which, he said, was already looking into claims of corruption in Harrisburg city government. The bureau told him it would look into the matter, but then cut its ties with him after he went public with the accusations during his run for city council, Papenfuse said.

The FBI refused to confirm or deny the existence of any investigation into Harrisburg's finances.

ECONOMIC REVIVAL

Reed rejected criticism that the city should never have spent bond fees on such items, because he believes his vision could have brought in money and helped the town flourish.

"The whole point wasn't historic preservation," he said. "It was designed to boost tourism in our local economy."

That local economy was all but dead in the 1970s and early 1980s -- until Reed became mayor while still in his thirties -- as it suffered from people moving out of the urban core.

Now, on warm spring nights independent bars and restaurants along Second Street, steps from the capitol building, throw open their windows and doors and put tables out on the sidewalks. According to city documents, Harrisburg had 8,658 businesses on its tax rolls in 2008, more than four times the 1,903 businesses in 1982.

Residents say it's ironic that during this awakening, the city faces the prospect of bankruptcy.

Still, prosperity has been uneven. In the shadow of the incinerator, people mill through rows of subsidized housing during the middle of the day. Vacant homes line the main road that leads to the Civil War museum. The city's median income in 2008 was $34,037, well below the statewide level of $50,713, according to City-data.com.

Reed, who now consults on economic development and government relations, said there is no connection between the artifacts and Harrisburg's crippling incinerator debt.

He argued his debt-reduction plan failed because of opposition from the current mayor, Linda Thompson, a former city council member who used the debt crisis to criticize Reed during her successful campaign in 2009.

Asked in a February interview whether Harrisburg would file for Chapter 9 bankruptcy, Thompson replied: "Absolutely not."

She said Pennsylvania Governor Edward Rendell has for now ruled out a state takeover of Harrisburg's finances under what is known as "Act 47." In the meantime, Thompson has suggested leasing or selling Harrisburg's assets such as parking lots.

TRASH-O-NOMICS

Collecting enough trash to make the incinerator cost effective has been a problem. The burner is designed to process 800 tons per day of solid waste, generating 24.1 megawatts of energy. Instead, according to recent authority reports, it processed 656 tons per day in March and 602 tons per day in February. In April, the local newspaper reported that haulers were dumping collected garbage in illegal sites to avoid paying the "tipping fees" for leaving it at the incinerator, shorting the authority of at least $300,000 annually. According to The Patriot News, a county employee paid $15.47 per hour now follows the trucks to ensure they make it to the incinerator.

The MSRB's Taylor said the incinerator financing from the beginning was "silly." "Anybody who's studied incinerator bonds for the last 30 years would find most of them had great difficulties, if not defaults," he said. "Where were Harrisburg's brains?"

TARNISHED REPUTATIONS

Filing for rarely used Chapter 9 municipal bankruptcy is a multi-step process that takes months to complete and that few cities or counties have ever undergone. For Harrisburg, the consequences of being unable to make the payments due before the end of the year have already begun raining down.

City Controller Miller told Reuters the city should consider bankruptcy, or negotiate a reduction of the debt with bondholders, but added that he is not sure how Harrisburg plans to handle the problem. "The mayor doesn't speak to me," he said.

He is urging the city not to sell its parking assets because they generate about $18 million a year, or about a third of general fund revenue. If those fees disappear, Harrisburg would likely have to impose a massive tax increase, he said.

Last month, the city council approved measures on how leases and sales of assets could be conducted, but with heavy restrictions, including barring any lease or sale until Harrisburg fully explores the option of bankruptcy.

Mayor Thompson reportedly is hiring a financial adviser and expects to have a plan in place by June.

But rating agency Moody's Investors Service says the incinerator debt will remain a burden for Harrisburg that "will stress the city's finances for the foreseeable future, negatively affect its creditworthiness, and jeopardize its future access to the public credit markets."

In the meantime, Harrisburg residents are stewing.

Ann Knaus, who has lived in Harrisburg eight years and lobbies the state government for the Natural Resources Defense Council, likens the incinerator to the so-called Big Dig in Boston -- the tunnel Boston took 16 years to build that went more than $10 billion over budget and is often considered the costliest highway project in U.S. history.

Her husband, Kurt, said he worries about what a default would do to Harrisburg's reputation and that of Pennsylvania.

"It doesn't say much about a state when the capital goes bankrupt," he said.

(Additional reporting by Jon Hurdle in Harrisburg and Karen Pierog in Chicago, editing by Jim Impoco and Claudia Parsons)

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These facilities ranged in size from 150 TPD to 2000 TPD. Most of these facilities utilized dry shredding to achieve the size reduction needed for the combustion process. Based upon the use of hydropulpers in the EPA demonstration in Franklin, OH, two major RDF facilities were constructed. In 1976 a 3000 TPD facility was built in Hempstead, NY. The Miami-Dade 3000 TPD plant was built in 1981 and in 1985 the plan was rebuilt replacing hydropulpers with dry shredders.

As mentioned above, mass-burn incineration to produce energy in the U.S. has a long history. The new generation of modern mass-burn WTE facilities with the grate technologies imported from Europe was initiated in the Harrisburg, PA. This 1500 TPD facility was completed in 1971 using Martin technology. It is still in operation however it has been rebuilt using a different grate technology. The Harrisburg facility was followed in 1975 by the Saugus, MA facility developed by Wheelabrator using Von Roll technology (1,500 TPD). In 1974, the City of Nashville, built the Nashville Thermal Transfer facility (720 TPD) to heat and cool approximately 40 buildings in the central city. The system utilized technology developed by Babcock Wilcox.

There are many more interesting projects with interesting stories in the WTE field. Currently the U.S. is seeing a resurgence of interest in mass-burn WTE and innovative "alternative" WTE technologies including gasification and pyrolysis. Each of these technologies will be discussed in this paper. The lessons learned from the projects of the 1970s, include:

- Research and development is best done by deep pocket organizations like EPA or large corporations;
- Promising designs and bench test data do not always prove out at the commercial level;
- Large scale ups have high risk as shown by the Baltimore/Monsanto project;
- Technical and operational risks are best assumed by the owner of the technology; and
- Organizations, such as cities, charged with managing daily waste disposal, cannot rely on facilities with a high risk of outage.

3.0 Proven Waste Processing Technologies

Waste has been converted to beneficial use on a large scale for well over 100 years. Since that time, the burning of municipal solid waste with energy recovery (now known as WTE) has matured into a safe, effective and environmentally acceptable technology. The proven large-scale waste processing methods include incineration and starved-air combustion, as defined below:

Mass-burn Water Wall Combustion: This is the controlled incineration of organic or inorganic waste with more than the ideal air (stoichiometric) requirement – excess air -- to assure that complete burning occurs. The fire box is constructed of water tubes to efficiently capture energy.

Mass-burn Starved air combustion: Starved air incineration utilizes less air than water wall incineration, and it produces ash similar in appearance to that from a conventional incineration process. The lower air requirement leads to smaller equipment sizes, which are factory built.

wastes, particularly tires. Goodyear obtained a patent to "de-vulcanize" tires and built a facility in Lincoln, NE to process in-plant scrap in the late 1970s. Several small units have been operated on tires. The application of microwaves to drying and decomposition of various wastes, including medical waste and nuclear waste, is proven, but its application to municipal solid waste has not been proven but is being promoted by Molecular Waste Technologies, Inc. Global Resource Corporation also proposes microwave plants for MSW, but has not constructed one.

5.0 Recent Reports/Procurements for Waste Processing Technologies

The last new MSW-processing WTE facility constructed in the U.S. commenced operations in 1996.[25] Since that time, no new greenfield commercial plant has been implemented. Several reasons accounted for this lull of activity in the WTE field:

1. Loss of Tax Credits – The 1986 Tax Reform Act eliminated the significant tax benefits for project owners/developers, contributing to the pipeline of projects.
2. Environmental Activism – Biased information about air pollution and ash impacts, and preferences for recycling, created public resistance.
3. U.S. Supreme Court's Carbone Decision[26] (1994) – Effectively ended legislated flow control, creating uncertainty in the revenue stream for projects.
4. Megafills – Large landfills with low tipping fees and no put-or-pay waste supply requirement out-competed WTE for the market.
5. Amendment to the Clean Air Act (1998) – New regulations required retrofit on existing plants and drove up WTE costs, effective as of December 2000.
6. Lack of Federal Leadership – Visible opposition by EPA to combustion and preference for waste reduction/recycling sent negative message about WTE.
7. Moderate Fossil Fuel Costs – The rapidly increasing fossil fuel costs of the 70s and 80s stabilized, reducing the value of the energy products from WTE facilities, which were key drivers in facilities developed earlier, and making overall project economics less attractive.

In the past few years, however, interest in WTE and waste conversion has begun to grow again. This renewed interest in waste processing technologies is due to several factors:

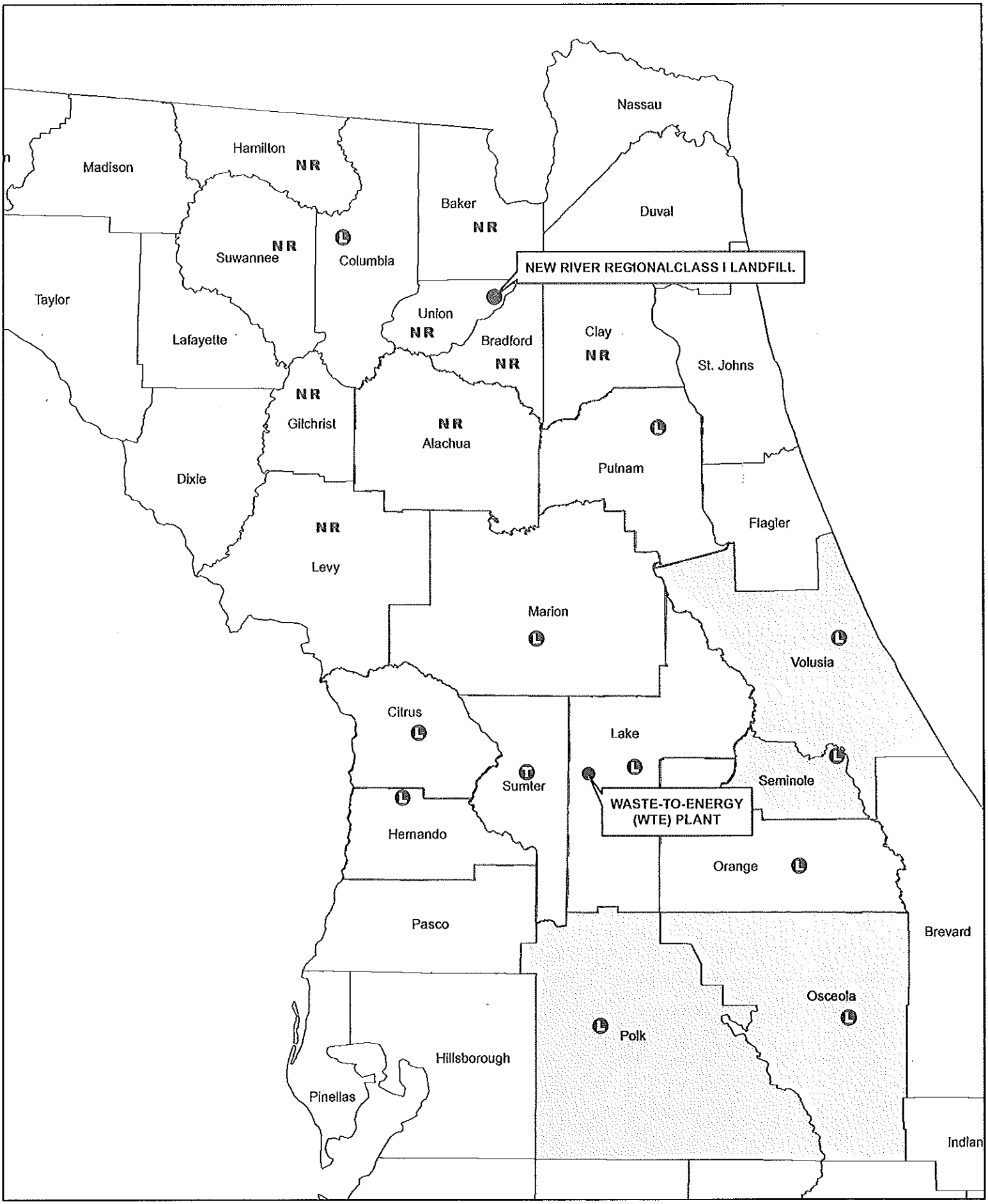
1. Clean Air Act Retrofits - The successful implementation of the CAA retrofits of the 87 operating WTE facilities demonstrated that the low emission requirement could be met, as discussed in Section 6. These successful retrofits reduced risk and established a solid cost database upon which new facility plans can draw.
2. Proven WTE Track Record – Superior environmental performance, reliability, advancements in technology and successful ash handling, including ash recycling and use in construction and elsewhere, have made WTE an acceptable option to consider as part of waste management planning. In

[25] Covanta Energy's 2,250 TPD mass burn plant in Niagara Falls, NY.
[26] C & A Carbone, Inc. v. Town of Clarkstown, 511 U.S. 383 (1994).

Table 7-1. Risk Assignment under Alternative Procurement Approaches

Risk Element	Risk Assumed By		
	A/E Procurement	Turnkey Procurement	Full-Service Procurement
	Capital Cost Risks		
Capital costs overruns	Owner	Contractor	Contractor
Additional capital investment to achieve required operating performance	Owner	Contractor	Contractor
Additional facility requirements due to new state or federal legislation	Owner	Owner	Owner
Delays in project completion which lead to delays in revenue flow and adverse effect of inflation	Owner	Contractor	Contractor
	Operation and Maintenance Costs Risks		
Facility technical failure	Owner	Contractor	Contractor
Excessive facility downtime	Owner	Owner[1]	Contractor
Underestimation of facility O&M requirements (labor, materials, etc.)	Owner	Owner[1]	Contractor
Insufficient solid waste stream	Owner	Owner/ Municipalities	Municipalities
Significant changes in the solid waste composition	Owner	Owner	Owner/ Contractor
Changes in state and federal legislation which affect facility operations	Owner	Owner	Owner
Inadequate facility management	Owner	Owner[1]	Contractor
Underestimation of residue disposal costs	Owner	Owner[1]	Contractor
	Recovered Product Income Risks		
Overestimation of energy recovery efficiency of technology	Owner	Contractor	Contractor
Significant change in solid waste composition	Owner	Contractor	Owner/ Contractor
Changes in legislation which affect energy production and/or use	Owner	Owner	Owner
Overestimation of solid waste quantities	Owner	Owner	Municipalities
Significant adverse changes in the market financial condition or local commitment	Owner	Owner	Owner/ Market
Downward fluctuation in the price of products	Owner	Owner	Owner
Inability to meet energy market specifications	Owner	Owner[1]	Contractor
	Tipping Fee Income Risks		
Diversion of waste to other competing facilities	Municipalities	Municipalities	Municipalities
Overestimation of the solid waste stream	Owner/ Municipalities	Owner/ Municipalities	Owner/ Municipalities
Adverse changes in participating communities' fiscal condition	Owner	Owner	Owner

[1]Modified turnkey procurements may provide for intermediate or long-term contractor facility operations, which could lead to further risk assumption by the private contractor.



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Landfill Transfer Station

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N