

Financing Plans for the Jefferson County Sewer System: Issues and Mistakes  
James H. White, III



I take my text for this presentation from Walt Kelly, whose Earth Day, 1971 cartoon encapsulates how I feel about the Jefferson County sewer program: "I have met the enemy and he is us." The Jefferson County sewer story has no heroes. The responsibility for this fiasco rests with all of us. If you think I have left any group out of this presentation that should be criticized, let me know and I will look into it.

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*Introduction*

Before dealing substantively with my topic, I have a couple of qualifications. First, my presentation is not a legal brief or legal testimony. I have not considered rules of evidence or tied many of my statements to documents. You should consider my presentation to be a personal recollection of events, bound together with analysis and opinion.

Second, I speak from experience that is substantial but not complete. Let me tell you about my experience.

Since 1967 I have been active in the field of public finance as a lawyer and an investment banker. I have been professionally involved with the Jefferson County sewer system on at least four separate occasions.

In the early 1980's I participated with the Environmental Services Department (ESD) and Coopers & Lybrand in the preparation of a financial model projecting sewer system financial operations and conditions, demonstrating consequences of growth in system users and the ability of the system to amortize the cost of capital expenditures. I recommended that the County obtain an audit of the sewer system financial statements, and Coopers & Lybrand conducted such an audit for one year. Further audits by a private auditing firm were resisted by the Department of Public Examiners at that time.

A few years later, our firm prepared a financial overview of Jefferson County operations, including all funds and activities, and predicted severe problems with sewer system operations. Larry C. Lavender, currently chief of staff to the minority on the U. S. House of Representatives Financial Services Committee, performed most of the work on the financial overview. Larry will be speaking after me.

Then, from February, 2003 to October, 2003 my firm participated as a subcontractor to BE&K, Inc. in the preparation of a report on the Jefferson County sewer system capital program, including engineering design, construction, and financing. Our work included preparation of a comprehensive financial model used to explore the rate implications of the system's then current capital expenditure plan.

From late December 2006 through January 2007 and from April 1, 2007 to July 10, 2008, my firm served as financial advisor to the County and addressed a number of significant issues regarding the County's financial structure and financing. We were discharged from part of our job and resigned from the rest when the County realigned politically and changed plans in negotiating its debt problems, pursuing a course that would have made bondholders completely whole at the expense of a variety of new and additional taxes, including taxes on newly authorized gambling revenues.

In addition to these formal engagements, I responded to inquiries from Commissioner Bettye Fine Collins during 1997 in connection with the initial sewer financing and the initial interest rate swaps entered into by the County. Subsequent to July 10, 2008, I have talked frequently to Commissioners Jim Carns and Bobby Humphrey. I have been assisted in this work by very able people in my firm who have the knowledge and experience to go head to head with the best in the public finance business, including the use of interest rate swaps and derivatives in connection with tax exempt bond deals.

### *Chronology of Major Events*

To set the stage, I submit the following brief chronology of events relating to the Jefferson County sewer system.

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|--------------|--|
| 1993 to 1996 | County is sued by Cahaba River Society and others for significant violations of the Clean Water Act. County agrees to settle in July 1995 and negotiates consent decree agreeing to eliminate sewer plant bypasses (i.e. dumping untreated sewage into rivers and streams) and unpermitted discharges. Court approves consent decree in December 1996. |
| 1996 to 2003 | The original estimate of the capital cost of complying with the consent decree was \$250 million. This grew to \$3.05 billion in 2003 due to poor planning, waste, and fraud. The total debt outstanding is now more than \$3.2 billion, including financing costs.  |

Spring 1997	Sewer debt structure established with new bond indenture. Structure provides for escalating debt service (just like a typical subprime loan), minimal debt service coverage requirements, no restrictions on deposit of system revenues (which makes sewer system cash subject to diversion for other uses), and automatic rate increases without vote of the Commission or a public hearing. Commission executes first interest rate swap.
Fall 1997	Commissioner Collins writes the Securities and Exchange Commission alleging irregularities.
October 2002 through 2004	Commission converts fixed rate debt into synthetic fixed rate debt using interest rate swaps, which are subsequently found to have been fraudulently induced. New structure has effect of stretching out debt service and lowering required rate increases in early years at the expense of dramatically increasing them in subsequent years.
January to October 2003	Commission retains BE&K, Inc. (with CH2MHill; Porter, White & Company; and PARCA as subcontractors) to review sewer system capital program and financing.
February 2005	Dramatic change in department management results from indictments returned against a former commissioner, ESD employees, and several contractors. ESD management changes as indicted employees are placed on leave.
July 1, 2007	Multi-year effort to convert County financial system to SAP comes to a head when SAP system is switched on. A number of old accounts are improperly mapped in new system. Users have difficulty using new system because of implementation defects and lack of familiarity. Interim and annual financial reporting degraded.
January 2008	S&P confirms A underlying rating on sewer bonds.
April 2008	88 days later S&P downgrades sewer bonds to D (default).

*A Principal-Agent Problem: Negotiating the Consent Decree*

Agency problems are studied in political science and economics and occur when an agent fails to pursue the interests of the agent's principal. A common agency problem is the propensity of management of publicly traded corporations to act in their own interest (for example, providing for excessive executive compensation) rather than in the interest of stockholders. The Jefferson County sewer debacle can be usefully analyzed as a very big agency problem. A definition of "agency problem" from the *Oxford Dictionary of Economics* is attached as an appendix.

Environmental groups sued Jefferson County in 1993 claiming egregious violations of the Clean Water Act. In July 1995 the County threw in the towel and agreed to settle. Settlement negotiations occurred between July 1995 and December 9, 1996.

Leading the negotiations for the County were the very same people responsible for violations of the Clean Water Act in the first place, including Jack Swann, Director of the Environmental Services Department. Also playing leadership roles were many of the engineers and lawyers who subsequently benefited greatly from the ensuing engineering, construction, and financing contracts. The engineers were local without the experience of working on projects of similar size and complexity in other parts of the world. They brought political pressure to keep national and international firms from participating in the project.

Many of these people have subsequently been convicted of crimes. The plaintiffs, angry at the violations of the environmental laws and the individuals responsible for them, insisted on onerous terms (some say impractical terms) in the consent decree. In retrospect, I believe that the County did not resist these terms vigorously because the tougher the decree the more the engineers, lawyers, and financiers benefitted from the resulting engineering, construction, financing, and legal fees and costs. An unholy alliance of environmentalists, bureaucrats, engineers, and lawyers cooperated to produce a result that benefitted all God's creatures except the one He made in His own image. County Commissioners were more interested in helping the engineers, lawyers, and financiers than they were in protecting the public interest. Ultimately, some of these engineers and financiers expressed their appreciation by giving things of value to Commissioners and County employees. Bribery is the ultimate agency problem because it diverts a public official from the public interest to the private interest of the person tendering the bribe.

Parenthetically, in over 40 years of experience in public finance, I have found that the decision that causes the greatest controversy among members of the governing bodies of Alabama issuers is the selection of underwriters and other members of the financing team. For various reasons, elected officials generally pay more attention to who is going to provide financial services and products than they do to substantive aspects of a financing. In fact, selection of the financing team takes up so much time that there is little energy for more important details, because the bankers and lawyers pursue decision makers zealously and sometimes shower them with campaign contributions and gifts.

The Jefferson County sewer consent decree required that specified results be achieved but was not based on analysis of the facilities required to achieve those results, estimates of capital and operating costs, or the affordability and reasonableness of the sewer service charges implied by such cost estimates. There was no consideration of, or finding on, the practicality of implementing the consent decree. The decree is another in a long line of decrees growing out of large federal cases that have had significant unintended and adverse consequences. (Jefferson County voters are responsible for electing the commissioners who took bribes, but I also think that one should be

mindful of the fact that the County employees who were convicted of taking bribes were products of a personnel system that has been under the oversight of the federal court for over 20 years.)

The weakness in the consent decree was reflected in the ongoing mismanagement of the resulting sewer capital program. The BE&K study found that the County's capital program suffered from lack of communication and coordination between the Finance and Environmental Services Departments. ESD took the position that it had the responsibility of determining what to buy and build and that it was up to Finance to furnish the money, whatever the cost or the required rate increases. Design engineers had no budgets to influence their designs. There was no long range planning regarding facilities, operations or finance, nor any attempt to fit the construction program within the limits of what rate payers could afford. In addition to a great deal of waste, a large percentage of the capital program was for expansion rather than remediation of the sewer system, forcing existing customers to pay unaffordable rates to finance facilities benefiting new customers under a "build it and they will come" rationale.

Lack of effective planning was reflected in the ever increasing costs of the sewer program. Cost estimates of necessary sewer improvements at the time of the court order ranged from \$250 million to \$1.2 billion. Because there was no comprehensive engineering or financial plan, there was no evidence before the Court on whether compliance with the consent decree was reasonably attainable. Thus, the consent decree became a black hole down which money, and the future of Jefferson County, was poured.

The record shows that, alone among public officials (including the then governor), without the support of business leaders or other persons of influence, and in opposition to the editorial position of *The Birmingham News*, Commissioner Bettye Fine Collins publicly opposed the consent decree because she did not believe that Jefferson County knew what it was getting into.

From the beginning, Jefferson County suffered from a severe principal-agent problem resulting from the fact that public officials charged with representing the public interest responded significantly to the private interests of consultants hired to negotiate and implement the consent decree (and sometimes, in impermissible ways, to their own interests). Neither the elected politicians, the public employees nor the retained consultants were adequately responsive to the interests of their ultimate principals, the public at large. Other presentations at this symposium will explore the issue of whether this circumstance is the result of an inadequate system of government in Jefferson County, or just inadequate elected officials. I have recently heard a very senior government official with long experience with the criminal justice system state that the commission form of government in Alabama, in which elected commissioners have both legislative and executive responsibility, is inherently subject to criminal conduct. Another way to state this conclusion is that the commission form of government is subject to significant principal-agent problems. Most governments in the United States, local, state, and federal, separate executive power from legislative power in order to interject a system of

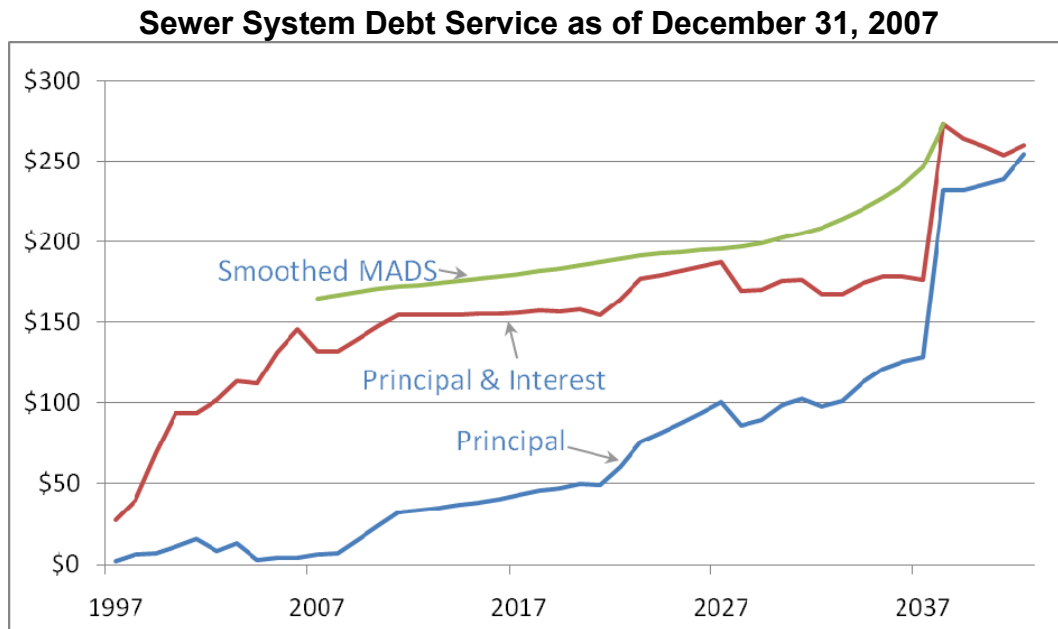
checks and balances in which the executive checks up on the legislators and vice versa. Jefferson County, and a number of other counties in Alabama, combine executive and legislative power in one office, escaping the salutary scrutiny resulting from a division of responsibilities. I believe that a change in form of government is necessary to solve the principal-agent problem, reduce the risk of public corruption, and improve the performance of Jefferson County.

### *The New Financial Structure: Negotiating the Indenture*

In late winter and spring of 1997, following court approval of the consent decree, Jefferson County established a financing structure for raising the money necessary to implement the consent decree. Raymond James & Associates, Inc. was the initial managing underwriter and is responsible, along with bond counsel and underwriter's counsel, for the initial structure. In later years, J.P. Morgan became the dominant force, introducing innovations such as synthetic fixed rate debt and auction rate debt.

Until 1983 a necessary condition of revenue debt financing by Alabama counties for sewer purposes was the enactment of sewer rates sufficient to pay maximum annual principal and interest on the debt. Elected politicians could not issue debt without facing up to the burden of approving potentially unpopular sewer service charges. State legislation enacted in 1983 permitted the issuance of revenue debt by counties without the adoption of rates equal to maximum annual debt service. In 1997 and subsequent years, Jefferson County took full advantage of this change in law and proceeded to issue massive amounts of sewer debt in a structure that delayed for many years the adoption of the full rate increases required to retire the debt. As of 2003, annual debt service was approximately \$90 million and was anticipated to triple to \$270 million by the year 2039. Anticipated increases in rates were even more pronounced as debt service was paid from bond proceeds during the construction period, delaying the time when rates had to be substantially increased.

The following graph shows the County's sewer debt service pattern in early 2008. Principal payments are negligible through 2007 and begin to pick up after that. "Smoothed MADS" refers to "smoothed maximum annual debt service" and represents a target for sewer rates to reach so that debt service spikes in later years could be paid. The nonlinear pattern of interest rates reflects the results of interest rate swaps designed to delay interest rate payments. By early April, as a result of the downgrading of the bond insurers, Jefferson County's annual debt service requirement was over \$250 million, or the amount planned for the year 2038. Even at the end of 2007, prior to the collapse, sewer service charges were expected to grow more than 200%, and probably substantially more, through 2037, reflecting increasing debt service, inflation, and expected capital expenditures.



In summary, as of December 31, 2007, before disaster struck, Jefferson County's sewer debt service pattern was (1) steeply increasing over time (instead of level) and (2) irregular (instead of smooth) as a result of multiple swap transactions.

The Jefferson County sewer debt structure is similar in a way to the structure of subprime mortgages which proliferated in a number of housing markets during the middle part of the last decade.<sup>1</sup> As in the case of Jefferson County, subprime mortgages were characterized by low "teaser" rates and low debt service in the early years. Only when the teaser rates expired and much higher permanent rates kicked in, did home owners realize that there was no way they could pay their mortgages from current income and the mortgage market began to experience the defaults that led to the financial crisis of 2007-2008. Jefferson County commissioners, both the honest and the dishonest, were severely frightened at the prospect of having to raise rates, and most of the creative financial structures employed were designed to postpone, for as long as possible, the day when rates would have to be raised substantially. In arranging for a delay in rate increases, the professionals involved in the financings removed the incentives to reduce the size of the capital program. So long as Jefferson County could print money there was no need to avoid unnecessary capital expenditures, waste, and outright corruption.

The aggressive nature of Jefferson County's debt structure may be best understood by a comparison of the Jefferson County and the City of Atlanta sewer revenue bond structures. Atlanta has a combined water and waste water system and has been

<sup>1</sup> Larry C. Lavender, currently chief of the minority staff for the U. S. House of Representatives Financial Services Committee, first drew my attention to the parallel between subprime mortgages and the Jefferson County financial structure.



faced with implementing an even larger sewer capital program than Jefferson County due to the fact that Atlanta had to separate its storm water and sanitary sewer systems. The following table compares characteristics of the two financing systems. Data for Jefferson County comes from an official statement dated February 1, 1997, and data for Atlanta comes from an official statement dated March 31, 1999.

<u>Characteristic</u>	<u>Jefferson County</u>	<u>Atlanta</u>
Revenue pledge	Net	Gross
Required revenue fund (to protect cash from diversion)	No	Yes
Required coverage	Less than 1.0 to 1 (less in early years)	1.10 to 1
Parity debt test	Less than 1.0 to 1 (less in early years)	1.10 to 1
Audit	By state examiners, dated 19 months after fiscal year and 10 months prior to date of debt issue	By national firm, dated 72 days after fiscal year end, and within one month of date of debt issue
Engineering feasibility study	No	Yes
Rate study	No, only limited rate projections	Yes, frequent
Affordability opinion	No	Yes
Rate increases authorized in advance	Automatic rate increases without political approval	Specific increases authorized by governing body

Comparative analysis indicates that by 2006, Jefferson County's sewer operations were substantially less credit worthy than other similar issuers monitored by Moody's.

	<u>Median</u>	<u>JeffCo</u>
Debt ratio [Debt/ (net fixed assets and working cap.)]	<b>32%</b>	<b>78%</b>
Total Debt Service Coverage (x)	<b>2.30</b>	<b>0.89</b>
DS safety margin (Income/gross revenue)	<b>18%</b>	<b>-9%</b>

Source: Moody's Ratings Criteria, 2006 Data

The absence of an engineering feasibility study in connection with the Jefferson County financing is noteworthy. It is customary for disclosure documents in governmental utility revenue financings (and in taxable project financings with similar security provisions) to include a written report by a firm of nationally recognized consulting engineers. In 1997, the latest edition of *Disclosure Handbook for Municipal Securities* published by the National Federation of Municipal Analysts recommended disclosure of a "feasibility/engineering study." Such a study describes the results of a comprehensive evaluation of the system being improved with the proceeds of the financing; the engineering, budget and appropriateness of the proposed projects; forecast statements of income, cash flow and financial condition; the adequacy, appropriateness and affordability of existing and proposed rates; and anticipated debt service covenants. No such study has ever been done on the Jefferson County sewer system. The BE&K study covered almost all of the topics customarily included in an engineering feasibility study, but it was not prepared in connection with a financing and not disclosed in any official statement. Paul B. Krebs & Associates prepared some projections and analyzed rates in connection with several debt issues, but their scope of work was limited and did not include a comprehensive review of system engineering or capital budgets.

In my opinion, no engineering feasibility study was prepared because the Environmental Services Department did not want anyone looking over their shoulders, and because the engineering firms who were closest to the Commissioner in charge of environmental services were not experienced or competent in doing such studies and did not want a national firm poaching on their territory. (Paul B. Krebs & Associates was a potential candidate to do such a study, but it was not part of the inside group of engineers.) There is a question about whether local engineers worked together to keep larger firms with a nationwide practice from doing work in Jefferson County. I have it from two sources that the U. S. Department of Justice investigated a potential conspiracy in restraint of trade under antitrust laws but did not think it could make a case.

An unusual feature of the Jefferson County financing structure is the automatic rate increase ordinance adopted in 1997 at the time of the original financing. Not only were rate increases stretched out and reduced in the early years by the back-ended structure of sewer debt service, but the responsibility for raising rates was largely removed from the Commission. Intended to provide comfort to rating agencies, bond insurance companies, and bond holders that necessary rate increases would be implemented, this ordinance permits the County's Finance Director (a non elected official appointed by the President of the Commission) to increase rates to meet indenture requirements without a vote of the Commission.

Sewer rates adopted by the Commission have always been thought to require a public hearing prior to adoption; the automatic rate increase ordinance removed this annoying step in the rate increase process and avoided a public vote by Commissioners that might come back to haunt them at election time. Since the adoption of the automatic rate ordinance, there has been only one public hearing at which the Commission decided to depart from the automatic rate ordinance.

Until recently, Jefferson County has never had a thorough study of its sewer rates in which capital and operating costs were analyzed and allocated to different classes of service, and the affordability and reasonableness of rates analyzed and determined. The automatic rate ordinance made rate increases a mathematical process, divorced from policy and political considerations, and has turned out to be a mistake. Public hearings, however raucous, might have protected the public from the incompetence and criminality that occurred.

*Bond Insurers and Rating Agencies: The Blind Leading the Blind*

How could debt securities based on such a poorly conceived financial structure be brought to market? Again, this is the same issue that arises in the case of subprime mortgages. The answer in both cases is that third party financial guarantors provided the platform on which the financings were based. In the case of Jefferson County, there was actually a competition to provide bond insurance on Jefferson County sewer debt.

In late 1996 and early 1997 it was widely known that Jefferson County would likely be issuing a significant amount of debt, and, motivated by ego and the prospect of profit, all of the players in the municipal bond world were anxious to participate. Several firms in the business of providing insurance against the default of municipal bonds were interested in Jefferson County's business. Proposals were solicited from these firms, and the County received proposals for very low insurance premiums. When successive proposals ended with premiums as low as allowable by insurance regulators, the bond insurance firms continued to compete by proposing ever more lenient security terms. Thus, it is possible that the security provisions protecting bondholders under the Jefferson County sewer indenture are the most lenient ever permitted for a major project financing.

Bond insurance brought a AAA rating to the Jefferson County debt, the same rate assigned to obligations of the United States of America. Bond insurance had a pernicious effect because it caused everyone to relax about the question of whether Jefferson County could ultimately afford to pay off the bonds. Lawyers, underwriters, swap providers, bond purchasers, even rating agencies, never thought bond insurer default was a possibility, so they neglected to consider it. When the bond insurers failed, the rest of the financing structure came tumbling down. S&P confirmed an uninsured A rating on Jefferson County sewer debt in January 2008 at the time the bond insurance companies were teetering on the edge of disaster, and 88 days later it issued a D (for "default") rating on the same debt, conclusively demonstrating its total lack of understanding of the financing structure.

The winner of the bond insurer competition was Financial Guaranty Insurance Company (FGIC), then a subsidiary of GE. FGIC proposed the lowest insurance premium and the most lenient credit terms, and thereby became the principal author of the Jefferson County financing structure that proved so disastrous. S&P reduced FGIC's

rating from AAA in January 2008 to BB in March 2008. On the way from AAA to BB, FGIC's decline tripped covenants in Jefferson County's financing documents. This resulted in a dramatic increase in interest costs and eventually in the acquisition of a very large percentage of Jefferson County's outstanding debt by financial institutions who had backstop purchase commitments outstanding or were forced by the New York attorney general and the Securities and Exchange Commission to buy auction rate securities whose sale was alleged to have been fraudulent.

Ironically, by the time FGIC imploded it had been purchased from GE by the Blackstone Group with financing arranged and held by J.P. Morgan, which played the dominant role in issuing Jefferson County sewer debt and became its largest debt holder. FGIC is the moving force behind the lawsuit filed by the indenture trustee and the bond insurance companies, and I have wondered whether FGIC is a stalking horse for its beneficial owner, J. P. Morgan, under circumstances where J. P. Morgan would have to struggle with various "clean hands" defenses and lose statute of limitation defenses were it a direct party. Because of its dominant role in creating and implementing Jefferson County's sewer financing scheme, and because of its close connection to the fraud that occurred, J.P. Morgan should be brought out of hiding and made to face the music in all relevant court proceedings.

FGIC's implosion resulted from its guarantees of securitized subprime mortgages. Recognition that such guarantees were improvident was the initial cause of rating agency downgrades. These initial downgrades undermined the Jefferson County financing structure which led to downgrades of Jefferson County debt, which in turn led to further downgrades of FGIC (and other bond insurance companies that were involved with Jefferson County by 2008).

The financial guaranty business has historically been regarded as highly risky. With few exceptions, Lloyd's of London has long prohibited its members from participating in this type of business. Until recently in the United States financial guaranty insurance has been limited to home mortgages and municipal bonds. Municipal bonds were typically underwritten to a "zero loss" standard. Only in the last decade were other risks added to the list of those eligible for insurance which came to be delivered in the form of credit default swaps, a structure invented at J. P. Morgan.

The Chairman of the Association of Financial Guaranty Insurers explained how the financial guaranty insurance business came to expand into riskier areas in testimony before the New York Assembly Standing Committee on Insurance on March 14, 2008.

Investors ... benefit from the financial guaranty insurer's:

- experienced credit selection;
- ongoing surveillance;
- effective enforcement of remedies;
- and in the extreme case, protection against default.

. . . [T]he low risk, conservative reward municipal bond insurance business alone cannot sustain a healthy monoline [bond insurer], which requires diversification

in order to maintain underwriting and pricing discipline when spread cycles in certain sectors are unfavorable.<sup>2</sup>

After wrongly claiming credit for what it did not deliver prior to the largest default of insured municipal debt (Jefferson County), Mr. McCarthy argued that the "low risk" bond insurance business needed to take on higher risk in order to earn higher margins. This was the fundamental failure of most of the financial services industry in the last decade, and of their regulators as well. They forgot that the first law of finance is that risk and return are directly related and that you do not realize return without assuming risk.

In summary, the immediate cause of Jefferson County's descent into financial hell, was the incompetence of the bond insurers and the rating agencies. Whatever the underlying soundness of the finances of the Jefferson County sewer system (and they were unsound), the sewer financing structure depended upon the continued high rating of the bond insurers. When the rating agencies downgraded the bond insurers, the County's interest rates went up and principal payments accelerated to such an extent that revenues available for debt service were no longer sufficient to permit timely payment. This caused the County to default as a practical matter, which in turn caused the bond insurers to be further downgraded by the rating agencies, resulting in a disastrous feed-back loop.

### *Interest Rate Swaps: Invitations to Fraud*

For many years it was known in financial circles in New York and elsewhere that J.P. Morgan was abusing Jefferson County in interest rate swap transactions. The term "abuse" understates the seriousness of J.P. Morgan's actions. At one point there was industry gossip that the governing body of the Municipal Securities Rulemaking Board, a principal regulator of the tax exempt bond business, discussed the swaps that J. P. Morgan was doing with Jefferson County, but did not take action.

The first abuse happened on March 5, 1997. Raymond James & Associates, Inc. was managing underwriter of a \$175 million sewer revenue fixed rate debt and swap adviser to the County on a related interest rate swap. Simultaneously with the issuance of the debt, the County entered into an interest rate swap with J. P. Morgan converting the fixed interest rate on the \$175 million in debt to a floating rate for ten years. Under the swap as executed, J. P. Morgan paid Jefferson County 4.814% and Jefferson County paid J. P. Morgan the PSA Municipal Swap Index rate, a floating rate set weekly. Based on market indications that Professor Robert Brooks of the University of Alabama and I received from large swap dealers (including Chase Bank, later acquired by J.P.

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<sup>2</sup> Excerpts from testimony of Sean W. McCarthy, Chair, Association of Financial Guaranty Insurers to the New York Assembly Standing Committee on Insurance, March 14, 2008.

Morgan), the fixed rate that J. P. Morgan should have paid Jefferson County was over 5.0%.

At my suggestion, Commissioner Bettye Fine Collins attempted to obtain further explanation of the interest rate swap and related debt. This was the first interest rate swap negotiated by the Commission and the swap documents were presented for approval in the absence of the Finance Director who was out of town. Commissioner Collins succeeded in delaying consideration of the swap for a few hours so that the Finance Director could return to Birmingham and explain the transaction. A transcript of discussions before the Commission concerning the swap reveals a great deal of imprecision and confusion. The swap transaction was not well explained or justified and there were several mistakes in discussing the cost of the transaction as compared to other alternatives available to the Commission.

As the hours went by, the pricing on the swap changed by almost \$900,000 to the detriment of the County, and the proponents of the swap sought to place responsibility on Commissioner Collins for this added cost, despite the fact that volatility is always present in the swap market and markets could have just as easily improved. *The Birmingham News* aided and abetted this deception in its reporting and published the following cartoon.



During his career in Birmingham, Cartoonist Stantis drew a large number of outstanding cartoons. In my opinion, however, this particular cartoon was wrong-headed and extremely damaging to the people of Jefferson County. As Commissioner Collins said at the time, in public finance there are no stupid questions. A major problem with the Jefferson County sewer financing structure was that there were too few questions asked, by the Commissioners, by the media, by Birmingham business leaders, by the lawyers involved in the financing, by the rating agencies, bond insurers, and bond pur-

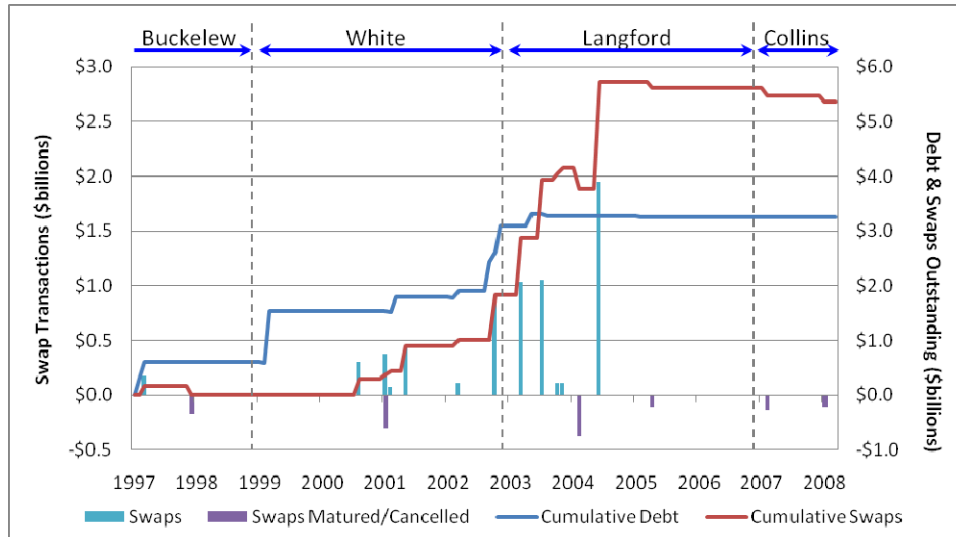
chasers. The Emperor wore no clothes and no one opened their eyes wide enough to realize it. More importantly, the Stantis cartoon tended to validate the actions of the professionals involved in the transaction and enable future abuses. J. P. Morgan and other swap providers could charge whatever they wanted with the expectation that those questioning a transaction would likely be ridiculed.

In March 1997 Charles LeCroy was employed by Raymond James & Associates, Inc. Sometime later, LeCroy joined J. P. Morgan and began to engage in questionable swap transactions with Jefferson County and other issuers, some of the details of which are discussed in Securities and Exchange Commission v. Charles E. Lecroy and Douglas W. McFaddin, Case No. CV09-U-2238-S, U.S. District Court, ND Ala. The SEC complaint alleges that, based on tape recordings from J. P. Morgan, LeCroy and McFaddin funneled compensation to friends of Jefferson County Commissioners, including Bill Blount, for the purpose of motivating the Commissioners to vote for J. P. Morgan financing plans and for J. P. Morgan swaps.

Testimony in the Larry Langford trial and information in the LeCroy complaint indicate a trail of money that ran from J. P. Morgan, to Goldman Sachs, to Blount, to Langford. Thus, J. P. Morgan and Goldman Sachs became bag men, furthering the corruption of Blount and Langford.

J. P. Morgan's ability to pay large sums of money to individuals and firms who were acknowledged in taped telephone calls not to be contributing materially to financings was made possible by gross mispricing of these swap transactions. LeCroy worked from Orlando, Florida, not New York, and was thought to earn compensation well above that customary for an individual with his status and title at J. P. Morgan, compensation reportedly in the range of \$2 million to \$3 million in 2002 and 2003. This should have been a tipoff to J. P. Morgan management. LeCroy was paid large amounts of money for arranging transactions that would be active for many years, and he suffered no economic pain when the house of cards he built came tumbling down. The books and records of J. P. Morgan, unless they have been destroyed, would confirm the profitability of the Jefferson County swaps in comparison to other swaps executed by J. P. Morgan, because these books and records would be necessary to determination of LeCroy's compensation.

From March 5, 1997 to June 10, 2004, Jefferson County executed \$6.692 billion in notional amount of swaps, in 23 swap agreements, 15 of which were with J. P. Morgan. The total debt outstanding at any time to which these swaps were related was less than half this amount, \$3.2 billion, indicating that J. P. Morgan and others were in effect "churning" swaps. A graphic depiction of the interest rate swaps in relation to the debt issues follows.



In early 2007, our firm reported publicly that the 23 swaps were mispriced by more than \$80 million in the aggregate, to the detriment of Jefferson County. Our actual number totaled \$93,519,182. This estimate was initially criticized by some of those involved in the transactions, but as time has gone by and details have emerged of how the transactions were motivated, we believe that we were conservative. We will probably never know the extent of the fraud against Jefferson County, because the details of swap transactions are not required to be reported. We have good information on the Jefferson County swaps, but the public and independent swap advisers do not have access to information on other swaps executed by other parties in the same time frame. Had it chosen to do so in a timely fashion, the SEC could have determined how J. P. Morgan valued these swaps based on their own records, but it either failed to do so, or has not disclosed the information that it found.

Swap dealers have fought and continue to fight hard to avoid public disclosure of swap transactions, and they have been assisted in this fight by the Federal Reserve Board. Chairman Alan Greenspan thought it best to leave determination of swap prices to the "market" in the mistaken assumption that efficient pricing would result. Mr. Greenspan misapplied efficient market theory in reacting adversely to the call for more transparency in swap pricing. The efficient market theory says that free markets produce prices that generally reflect available information. The theory does not say that markets are inherently efficient, particularly when relevant information is not available. By failing to ensure transparent reporting of swap prices, the Federal Reserve Board is responsible for the absence of good information and thus inefficient markets, and Jefferson County has suffered mightily as a result. To be efficient, financial markets require rapid and accurate dissemination of relevant information. A party with information will always be able to take advantage of a party without information, just as J. P. Morgan took advantage of Jefferson County on multiple occasions. The major thrust of federal securities law is to make securities markets efficient by requiring disclosure of relevant information. Unfortunately, at the urging of J.P. Morgan and other major swap dealers who want to make more money in an unregulated market where access to



knowledge is unequal, Congress has chosen to exempt swaps from disclosure requirements, thereby making possible the fraud that occurred in Jefferson County.<sup>3</sup>

Congress and the Federal Reserve Board should assure that derivative transactions between financial institutions on the one hand and small and middle market corporations and state and local governments on the other, are reported immediately to central data repositories. I am convinced that only such a system of reporting will prevent the fraudulent mispricing of swap transactions with counterparties who lack the information required to protect themselves. If interest rate swaps were treated as securities, fraud would be found to be occurring in the swap market many times a day.

In November 1997, I drafted a letter, which Commissioner Collins sent to the Securities and Exchange Commission, complaining about the March 5, 1997 swap transaction and enclosing a number of exhibits. For many years there was no response to this letter. Then in 2007 and again in early 2009, Congressman Bachus re-sent this letter to the SEC. As in the case of the Madoff fraud (and a number of other similar cases), the SEC's failed response led to continuation of questionable and fraudulent activity. And the recent SEC settlement with J. P. Morgan has provided insignificant relief when viewed from a comprehensive prospective of what has happened to Jefferson County.

More recently, Commissioner Jim Carns wrote the SEC asking for a comprehensive investigation of the Jefferson County sewer financing, similar in scope to the investigations of the defaults of the City of New York, the Washington State Public Power System, and the City of Miami. There has been no response to this request. We are witnessing once again what happens when the watch-dog does not bark.

#### *What Motivated J. P. Morgan?: Follow the Money*

What motivated J. P. Morgan, one of the leading financial institutions in the world, to engage in the sort of conduct that has been disclosed in the case of Jefferson County? Was it just a few rogue bankers and traders, or was it something deeper? Most, if not all, of the J. P. Morgan bankers with any contact with Jefferson County are gone, but there is a story that is relevant.

In the late 1990's, Joe Mysak, formerly a columnist for the Bond Buyer, was editor of a publication called *Grant's Municipal Bond Observer* (the *Observer*). On September 24, 1997, Professor Robert Brooks and I were speakers on the subject of variable rate tax exempt debt at a conference in New York sponsored by the *Observer*. The luncheon speaker at the conference was John McColloch, the head of public finance at

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<sup>3</sup> It may be that failure to disclose the excessive spreads on the J. P. Morgan interest rate swaps in official statements constitutes fraud under Section 12 of the Securities and Exchange Act of 1934 and Alabama law, in that such disclosure would arguably be material to a prospective purchaser of debt.

J. P. Morgan. Joe Mysak's notes from McColloch's speech, which Mysak sent me in March, 2008, quote McColloch as follows:

Investment bankers have an opportunity to offer a broader product line to issuers than just bond underwriting, which is fortunate, because revenues from traditional municipal sales, trading and underwriting no longer form the foundation of a prosperous business. In fact, if one analyzes the circumstances of the firms that have abandoned the business, the constant in each case was that management defined the business too narrowly. If you position yourself as just a bond house, you won't be profitable enough to survive in today's municipal business.

McColloch was making the same point about the public finance business that Sean McCarthy later made about the municipal bond insurance business: the traditional, conservative business did not make enough money to satisfy Wall Street objectives. To achieve individual and institutional objectives it was necessary to take on more risk. Thus, J. P. Morgan added municipal derivatives to its bag of tricks. Suddenly, issuing municipal debt became an intermediate objective on the path to engaging in municipal derivatives transactions. Underwriting municipal debt was a transparent, low margin business. Derivatives were a black box, high margin business. To J. P. Morgan Jefferson County was not an opportunity to provide service or assist with debt financing; it was an opportunity to make money by doing derivative deals. It was a dramatic departure from the J. P. Morgan mantra of "doing first class business in a first class way."

The creative financial structures invented by J. P. Morgan during the last 15 years have been used by it and others to wreak havoc in the financial markets. The latest new new thing can frequently bring benefits to clients, but its very newness obscures the risks involved. Whether the client has been Enron or Jefferson County, J. P. Morgan clients have suffered greatly from a business model that called for new, innovative services as a means of making money in traditional investment banking areas. The risks of "latest new new things" are compounded by a compensation system that pays people for innovation before the innovations are proven and without providing for individual penalties if they do not. We need a reengineering of compensation for bankers doing creative deals. Perhaps J. P. Morgan can apply some of its smarts to this problem.

It is no coincidence that *Bloomberg* scooped the rest of the financial press on J. P. Morgan's abuse of Jefferson County, as Joe Mysak moved to *Bloomberg* when he discovered that traditional public finance would not support another independent publication covering the business. At *Bloomberg* Mysak gave invaluable guidance to the reporters and editors who did an outstanding job on the Jefferson County story.

### *One Cannot Manage What One Cannot Measure*

Over the more than 30 years that I have been an observer of the financial affairs of Jefferson County I have been continuously bothered by the failure of the County to

provide up to date financial information. The comparative analysis of Jefferson County and Atlanta debt offerings described earlier illustrates my point. Historically, by the time Jefferson County issues audited financial statements, the information is so stale as to be of very little value.

Under the Langford administration the budget office began to report directly to the President of the Commission rather than to the Finance Director, and the actual budgeting process was so deficient as to be out of compliance with state law. There was no systematic preparation of financial statements for any period that permitted comparison of actual results to budget in a format meaningful to members of the County Commission or to third parties.

In addition, under Commission President Langford and continuing under Commission President Collins, the second and third positions in the Finance Department were empty for an extended period. As a consequence, for a number of years the Finance Department did not (and still today does not) have the capacity to close the County's books at the end of a fiscal year and produce unaudited financial statements in a form complying with governmental accounting rules. The County has been forced to hire a firm of certified public accountants to prepare financial statements, which are then audited by the State Examiners, or more recently by a second firm of certified public accountants. Most recently, the County has failed to hire private firms to prepare or audit financial statements. Moreover, the State Examiners have declined to audit the County under governmental accounting rules, although they are in the process of performing a compliance audit looking for violations of law.

One of the reasons that the County decided not to hire private firms to close its books and audit its financial statements is that the cost of such services had grown to very high levels. The reason for these very high costs is that the County's financial systems are in considerable disarray. During the Langford administration, and perhaps before, the County decided to upgrade its financial systems and chose to install a SAP system after a committee of mid level County managers undertook an evaluation process and recommended another system. When the County signed contracts providing for the purchase and installation of the SAP system, the Finance Director was designated as the County's representative under the contracts. Subsequently, however, both the Finance Director and the Director of Information Technology were instructed to have nothing to do with the installation, which was managed entirely by consultants and mid level County employees. The SAP system is notoriously difficult to install and use, even in a competently managed organization, and the start up of the system in July 2007 was a disaster.

During my sporadic involvement with Jefferson County, I have never seen a monthly financial statement for any department or activity of the County, much less the County as a whole, or any financial statement comparing actual to budgeted performance. I am sure there must be at least a few departments with such financial statements, but they have been the exception rather than the rule. Additionally, I have never seen an interpretation of departmental financial statements employing quantitative, non-

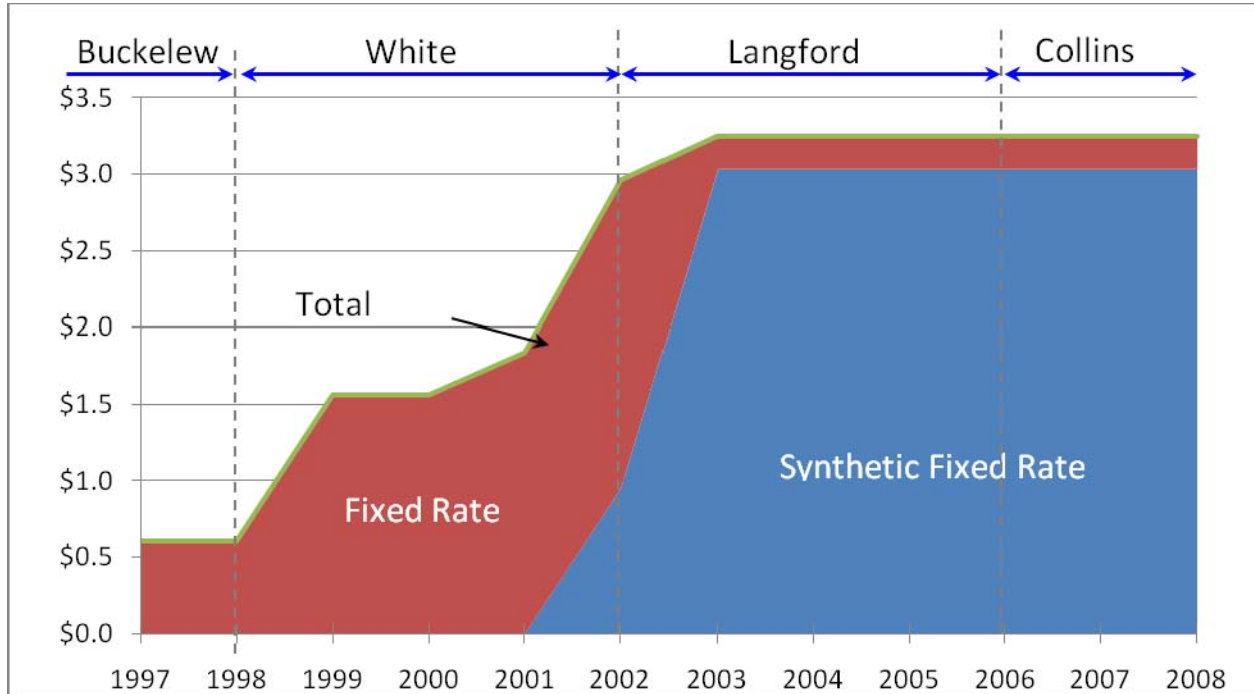
financial data measuring output or performance of a Department. In short, financial management methods commonplace more than 50 years ago are mostly unknown in Jefferson County.

The lack of interim and annual financial statements, the deficiencies in the financial system, and the lack of reliable management information are themselves risk factors that should have emerged in a competent due diligence investigation by J. P. Morgan and other underwriters, and should have been disclosed in the official statements pursuant to which securities were offered. The rating agencies knew about the problems with financial information, but issued their ratings anyway. The bond insurers would have known had they done even the most superficial investigation. As financial advisor to the County during the period April 1, 2007 to July 10, 2008 we took the position that the lack of good financial information meant that the County could not publicly issue debt without violating the anti-fraud provisions of state and federal securities laws. Thus, any restructuring plan that contemplated the public issuance of debt was, and remains today, a nonstarter.

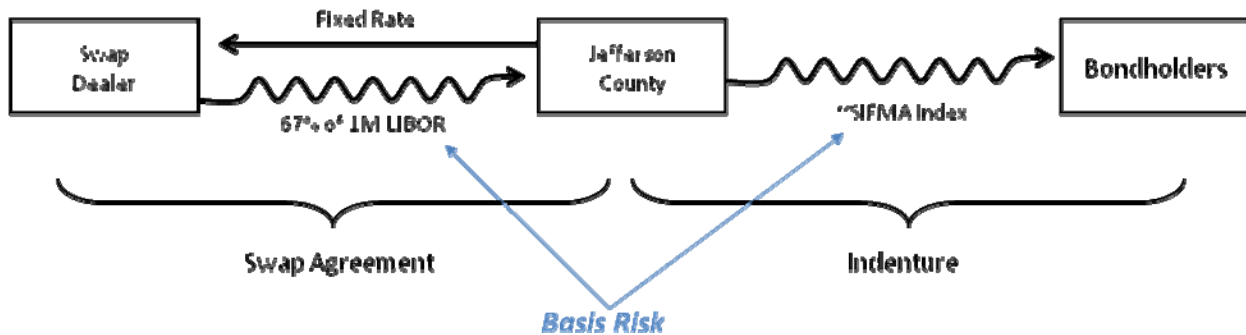
Jefferson County's problematic financial systems are on a par with the situation at HealthSouth at the time of discovery of the massive fraud at that company. HealthSouth attacked its problem by hiring a leading turn-around-management consultant, Alvarez & Marsal, which brought in scores of accountants to reconstruct HealthSouth's financial records. In spring 2008 we and others recommended that Jefferson County employ Alvarez & Marsal, principally for the purpose of reconstructing the County's financial statements and stabilizing its financial systems. That recommendation was rejected by the Commission, due to high cost and concern that the Commission would be ceding control of an important County function to an outsider. In retrospect, failure to hire Alvarez & Marsal has been a costly mistake.

#### *Synthetic Fixed Rates: Risks Overwhelm Benefits*

Prior to October, 2002, all of Jefferson County's sewer debt was fixed rate. By the fall of 2002 the County was obligated under financing agreements to raise sewer rates by ever larger amounts. This obligation was anticipated to cause political concerns for the County commissioners, and, not wanting to let such a crisis go to waste, J.P. Morgan came up with a structure that had the potential to reduce interest costs and debt service in the near term, thereby delaying some rate increases, while providing J. P. Morgan the opportunity to make a lot of money. The risks of the structure only became apparent in early 2008 when it fell apart. The following chart shows the conversion of fixed rate to synthetic fixed rate financing that occurred in 2002 and 2003, principally, but not entirely, under the leadership of Larry Langford.



J. P. Morgan's proposed structure was a synthetic fixed rate issue in which the County issued variable rate bonds and then swapped the variable rate to fixed. The following chart illustrates the structure.



A comparison of some of the important features of fixed and synthetic fixed rate debt is presented in the following table.

<u>Feature</u>	<u>Fixed Rate</u>	<u>Synthetic Fixed Rate</u>
Interest rate cost		Lower
Financing costs		Higher

<u>Feature</u>	<u>Fixed Rate</u>	<u>Synthetic Fixed Rate</u>
Transparency of financing costs	High	Low (swaps opaque)
Complexity	Low	High (many firms continuously involved)
Stability of financing	High	Low (important financing agreements periodically renegotiated)
Credit enhancement risk	Assumed by debt holder	Assumed by County

Careful review of this table reveals that the synthetic fixed rate structure is much riskier than the fixed rate structure. This should not be surprising since in the financial world, greater benefit is usually accompanied by greater risk. The County anticipated very low rates (well below 4% over 40 years), but it incurred more risk to obtain these lower interest rates.

What turned out to be the most important risk was that the credit enhancement entities (the bond insurers) could be downgraded. When this happened to the relatively small portion of County fixed rate debt, there were no consequences to the County. The debt lost value, but the holders of the debt incurred this loss, not the County. However, when the insurers of the synthetic fixed rate debt were downgraded, the County's debt service ratcheted up (effectively doubling or tripling), because the County's debt service obligations were effectively tied to the credit rating of the bond insurers, and a small decrease in the credit rating of the bond insurers had an unforeseen, catastrophic effect on the County. The County and others have now sued the bond insurance companies claiming damages for the alleged obligation of the bond insurance companies to maintain their high credit ratings.

The risk that the bond insurance companies could be downgraded was not disclosed in County official statements or foreseen by the professionals involved. Everyone thought that the rating agencies would be monitoring the bond insurance companies. What happened is that both the rating agencies and the bond insurance companies got greedy. The bond insurance companies wanted to earn more and higher premiums on insuring securities created from subprime mortgages and other assets, and the rating agencies wanted fees for rating these securities. Everyone forgot that the financial guaranty business is risky, especially outside the relatively safe public finance area where default rates are historically very low and actual losses historically miniscule.

As previously noted, the bond insurers suffered from an agency problem. They had collected insurance premiums in the expectation that they would maintain AAA rat-

ings to protect the value of debt over many years. In the case of long term debt their obligation was to the holders of the bonds, although the insurance premiums were paid by Jefferson County. But those deals were done, the premiums were paid, the profits were booked in the past, and the bond insurers wanted to make money during the current year and their executives wanted bonuses in the current year. So they began to insure riskier deals for larger margins and the beneficiaries of their outstanding policies paid the price when the risky deals came undone. No doubt, the bonuses were not returned.

Similarly, the rating agencies issued their ratings for the benefit of debt holders and debt purchasers, but their fees were paid by issuers. To make more money they had to please issuers. Rating agency officials took home the money, and the debt holders took it in the ear.

*Defining Reasonable: A Job for Lawyers, Judges and Economists*

The power of Jefferson County to impose sewer service charges is based on Amendment 73 to the Alabama Constitution of 1901, which requires that rates be "reasonable and nondiscriminatory." The requirement that rates be nondiscriminatory may limit flexibility and creativity in devising rate schemes. The requirement that rates be reasonable is an important but ambiguous limitation on the power of the County (and a receiver or court) to raise rates.

The proper interpretation of "reasonable" in this context is important, because debt holders and bond insurance companies are suing the County seeking appointment of a receiver to raise rates. The debt holders (and by subrogation, the bond insurance companies) are entitled to receive the net revenues (gross revenues after expenses) from operating the sewer system and they have the right to require increases in rates to cover debt service to the extent such increased rates are reasonable. In the absence of a settlement of this litigation (which will be difficult to achieve in the event that rate payers and citizens are deemed to have standing to litigate the issue of reasonableness), extensive litigation will be required to resolve the issue. A special master in the federal court case Bank of New York v. Jefferson County issued a report asserting that sewer service charges could be doubled without being unreasonable. In my opinion, a doubling of rates would be ridiculous, but case law on the issue of the reasonableness of utility rates is sparse.

In some of the leading Alabama cases, there has been testimony by engineers on the issue of reasonableness. Standards applied include whether the rates are necessary to cover expenses and debt service and whether the rates are comparable to other systems similarly situated. More recently, following suggestions by the Environmental Protection Agency, consultants have sought to determine the "affordability" of rates by comparing sewer service charges to median household income. However, this approach has yet to be supported by any Alabama case.

I believe that the courts will look to custom and practice in determining the word "reasonable" in the context of utility rate setting by governmental bodies, and that, in addition to public law cases and the concept of affordability, it will rely upon the body of law and regulations applicable to profit utilities. The following table sets forth a list of the principles that I believe applicable and how they relate to the reasonableness of Jefferson County sewer rates.

<u>Principle</u>	<u>Application to Jefferson County</u>
Necessary to cover expenses and debt service (and maintenance capital expenses).	Rates necessary to cover expenses, debt service and capital expenses would be extremely high under any conceivable scenario that does not include substantial forgiveness of debt.
Affordability – ratio of sewer bills to median household income.	A tough standard for large parts of Jefferson County, depending on how applied.
Comparison to other jurisdictions.	Jefferson County rates come close to the highest in the United States. Atlanta rates are higher, as is Atlanta median household income.
Rate payers should not have to pay for capital expenditures and financing costs that result from fraud.	A problem for those seeking higher rates.
Rate payers should not have to pay for unnecessary capital expenditures.	A problem for those seeking higher rates.
Rate payers whose rates are very high should not have to pay for system expansion not shown to be of benefit to rate payers.	A problem for those seeking higher rates.
Rate payers should not have to pay for incompetently designed and gold plated capital expenditures.	A problem for those seeking higher rates.
Because of fraud and corruption, legislative decisions regarding rates by Jefferson County Commission not entitled to deference.	Existing rates may be too high, not too low.

At least one other definitional problem arises under the debt indenture. Debt holders and bond insurance companies will likely argue that net revenues should be used to pay debt service before capital expenditures. The problem with this interpretation is that a significant level of capital expenditures is required on an annual basis to comply with the Clean Water Act, and Jefferson County is under a federal court injunc-



tion to comply with the Clean Water Act. Because this injunction predates the debt indenture, it is arguable that the debt holders come behind capital expenditures necessary to maintain compliance with the Clean Water Act. A court would have to consider that failure to comply with the Clean Water Act would likely lead to curtailment of acceptance of new customers on the existing system and possibly a reduction in net revenues to the detriment of debt holders.

Jefferson County's ability to subsidize sewer operations, even if it desired to do so, is extremely limited. The County general fund is in poor shape and it is facing default on its general obligation debt. Moreover, continuation of its occupational and business license taxes will be subject to a vote by County residents in 2012 (although there will be attempts to avoid such a vote by claiming that the vote mandated by state law is unconstitutional). Debt holders and bond insurance companies are negotiating not just with the County Commission, the Governor, and the Legislature of Alabama, but with the people of Jefferson County who may be in a position to do a lot of damage, if provoked, by voting against continuation of the occupational and business license taxes.

In any case it is important to remember that Jefferson County's sewer debt is non recourse. As stated previously, the deal cut with bondholders limits their recourse to net sewer revenues. Several of the major players from Wall Street have commented to me that "counties and municipalities do not default." I remind them of the default of the Washington Public Power Supply System where bondholders received 26 cents on the dollar for approximately \$2.25 billion of bonds after a *decade* of litigation. Further, the Jefferson County case is distinguished from the Washington Supply System default by the significant degree to which Wall Street participated in fraud. In fact, it would not be a miscarriage of justice if J.P. Morgan and other Wall Street players were required to assume responsibility for the entire \$3.2 billion in outstanding debt.

*Reprise: "I have met the enemy and he is us"*

One is tempted to place the blame for Jefferson County's problems on someone else. Larry Langford and Bill Blount say it was the bond insurance companies. The lawyers and the engineers say it was the bankers. Steve Saylor says we did not issue enough debt. The Big Mules say whoever is at fault, do not declare bankruptcy – raise taxes instead. The rate payers and citizens say "they are all crooks." Governor Riley says bankruptcy is immoral, and then he says nothing.

And then there are the questions. How could the big utilities stand by while Jefferson County incurred five times as much debt per customer as Alabama Power? How could the big banks stand by while Jefferson County failed to issue financial statements? And our engineering community, of which we are very proud, should be asking how did we let these crooked, incompetent engineers smear our profession? Congress should be asking why were the SEC and the Federal Reserve asleep at the switch? And all of us should be asking, is there something more that we should have done?

The scope of the Jefferson County fiasco is so astounding that one has to turn to fiction for a really good precedent. Robert Penn Warren's 1946 Pulitzer prize winning

novel, *All the King's Men*, is a fictional account of Huey Long, whose name in the novel is variously Willie Stark or simply, "the Boss." A major theme in the book is whether it is possible to be "good" and still "do business," and whether ethical, law abiding conduct is possible in the real world. The Boss argues the negative.

[W]hat folks claim is right is always just a couple of jumps short of what they need to do business. Now an individual, one fellow, he will stop doing business because he's got a notion of what is right, and he is a hero. But folks in general, which is society, . . . is never going to stop doing business. Society is just going to cook up a new notion of what is right. Society is sure not ever going to commit suicide.

Explicitly or implicitly the justification by many of the players involved in the Jefferson County sewer system was that corrupt acts were required to do business.

In a way, William Faulkner, another famous Southern writer, responded to Robert Penn Warren's Boss in Faulkner's 1950 Nobel Prize acceptance speech:

I decline to accept the end of man. . . . I believe that man will not merely endure: he will prevail. He is immortal, not because he alone among creatures has an inexhaustible voice, but because he has a soul, a spirit capable of compassion and sacrifice and endurance.

I believe that Jefferson County can prevail, and even become an example for the rest of the state and the region. However, achievement of this vision for Jefferson County will require compassion and sacrifice and endurance, as well as competence . . . from all of us. It will not happen through quick fixes or expedient compromises, which the public does not trust and will reject. It will require time during which there is a restoration of the public trust, which I believe can occur only through a transparent process in which every effort is made to assure that those responsible for the fiasco pay for it, and it will require reform of the Jefferson County government, including an effective financial system and a change in the form of government. It will require high aspirations and outstanding performance.

Appendix

Excerpts from *Oxford Dictionary of Economics*:

"Agency problem" and "agency theory"

**agency problem** The difficulties encountered when a principal delegates a task to an agent. The agency problem arises when the principal and the agent have different objectives and there is \*asymmetric information and an \*incomplete contract. The asymmetric information prevents the principal from perfectly monitoring the agent, and the incomplete contract makes it impossible to determine what will occur in all possible contingencies. The principal cannot therefore ensure that the agent always chooses the action the principal would wish to see chosen. \*Agency theory determines how contracts can be designed to ensure that these problems are best mitigated.

**agency theory** The theory of the contractual relationship between a principal and an agent. Agency theory analyses the issues that arise when a principal delegates a task to an agent but there is \*asymmetric information and an \*incomplete contract. The basis of the analysis is that the principal and the agent have different objectives. For example, the owner of a firm (the principal) may wish to maximize profit but the manager of the firm (the agent) aims to maximize a utility function that is increasing in income but decreasing in effort. The first-best contract would make the reward a function of effort and be designed to induce the efficient effort level in every circumstance. The agency problem arises when there is an asymmetry of information such that the principal cannot observe the effort level of the manager and hence cannot condition the contract upon it. Instead, the contract has to be conditioned upon an observable and verifiable quantity such as the level of profit. This prevents the contract from ensuring that the efficient level of effort is always supplied. The design of the contract has to take into account incentive effects and the allocation of risk between the principal and the agent. It is often assumed that the principal is \*risk-neutral and the agent \*risk-averse, in which case, putting incentive effects to one side, all of the variability in pay-off should fall on the principal. Such a contract does not provide any incentive for the agent, so leading to the balance of risk sharing and incentives. The need to provide an incentive to the agent makes the expected profit of the principal lower than that with the first-best contract that could be used with no asymmetry of information. This is the agency cost of implementing a second-best contract in the presence of asymmetric information. Agency theory has found many applications in economics. Two illustrative examples are the consequences of the separation of control between shareholders and managers, and the delegation of taxation and \*public good provision to states within a federation.