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# Report on fiscal Impact modeling research

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## MEMORANDUM

Date: May 21, 2004

From: Dennis G. Colie, Ph.D.  
Director and Research Economist

To: Don Lombardi  
Tampa Bay Regional Coalition  
Suite 1500  
201 East Kennedy Boulevard  
Tampa, Florida 33602

Subject: Report on Fiscal Impact Modeling Research

The purpose of this research is to ascertain, and then report, information relevant to an analysis and evaluation of the fiscal impact models, which were developed by Tischler and Associates, Inc. for the Hillsborough County City-County Planning Commission (the Planning Commission). Furthermore, based on the materials at hand, we determine and report what, if any, additional documentation, data, or information may be required for an analysis and evaluation of the models. The Tampa Bay Regional Coalition (TBRC) commissioned USF's Center for Economic Development Research (CEDR) to conduct the research.

Specific activities included in the scope of this research are: 1) a review of documents provided to us by the TBRC, and 2) a review of the Model Reference Manual. The TBRC obtained the documents, which they provided to us, from the Planning Commission through a Freedom of Information Act (FOIA) request to the Planning Commission. The TBRC included the Model Reference Manual in its FOIA request, but the Planning Commission's reply stated that the Manual is a proprietary product of Tischler and Associates, Inc., and therefore could not be reproduced. Therefore, CEDR requested to the Planning Commission that Dr. Dennis Colie, research economist, be allowed to read the Manual at the Planning Commission's offices.

## Background

In February 2003, the National Association of Industrial and Office Properties (NAIOP) of Florida commissioned CEDR to perform a comparative analysis of the following impact models. CEDR analyzed the fiscal impact model developed by Fishkind & Associates to be used by local governments in Florida; the fiscal impact model developed by Tischler & Associates to be used by the Planning Commission; and the REMI™ economic and fiscal impact model used by CEDR. CEDR reported its research findings to NAIOP of Florida by memorandum, dated June 30, 2003, subject: Fiscal Impact Analysis Model (FIAM). Although the bulk of the report addressed the Fishkind model, there is some coverage of the Tischler approach to fiscal impact modeling using case studies, i.e. prototypes of development.

Subsequently, the Planning Commission made public on its Internet site a report, titled “Fiscal Impact Evaluation of Current County Growth Trend,” dated August 15, 2003. Tischler and Associates, Inc., Bethesda, Maryland, prepared the report. Related to the report, and also on the Planning Commission Internet site, is a press release, titled “Report Says Growth Not Paying for Itself in Hillsborough County,” dated August 21, 2003.

At the request of TBRC, CEDR reviewed Tischler’s August 15, 2003 report to the Planning Commission. And, on October 28, 2003, at a meeting scheduled by the TBRC, Dr. Dennis Colie of CEDR made a two-part presentation. The first part was a review of Dr. Colie’s examination, which was previously reported to NAIOP of Florida, of Dr. Fishkind’s FIAM. During the second part of the presentation, Dr. Colie reported on his examination of Tischler & Associates’ August 15, 2003 fiscal impact evaluation report. A copy of this presentation is located behind **Tab A**.

In letters, dated Nov. 10, 2003; Dec. 5, 2003; Jan. 15, 2004 and Feb. 19, 2004 the TBRC requested information, under the provisions of the FOIA, from the Planning Commission regarding the use of its Tischler & Associates fiscal impact model. Copies of these letters are located behind **Tab B**.

The Planning Commission responded to the TBRC’s requests for information in letters dated Dec. 8, 2003; Jan. 20, 2004 and Mar. 3, 2004. (According to the TBRC, the Dec. 8, 2003 letter was never received by their organization.) Copies of these letters are located behind **Tab C**. On January 20, 2004 a representative of TBRC picked up a package of information assembled by the Planning Commission. After reviewing the package of information, TBRC sent a letter (Feb. 19, 2004 at Tab B) to the Planning Commission requesting five specific additional items of information. The Planning Commission’s response (Mar. 3, 2004 behind Tab C) explains why each item is not available.

On March 29, 2004 the TBRC commissioned CEDR to determine if sufficient information is available to critically evaluate the Tischler fiscal impact models, which were created for the Planning Commission.

## CEDR's June 2003 NAIOP of Florida Report

We review the NAIOP report here, because much of the discussion and findings of that report continue to be relevant to this research. We reproduce the Highlights portion of the report in **Tab D**.

The purpose of the NAIOP research was to analyze the strengths and weaknesses of the FIAM, which is customized by Fishkind & Associates for local governments in Florida.

The NAIOP report states, "The motivation for a fiscal impact model is a need to integrate government's costs and revenues with its land use decision making and comprehensive planning. The goal of the Governor's Growth Management Study Commission is to make fiscal impact analysis a routine part of land use planning. In 2002, the State of Florida awarded a contract for the development of a fiscal impact model to Fishkind & Associates of Orlando. The contract provides for seven pilot communities to receive the FIAM. The communities selected are the counties of Orange, Palm Beach, Sarasota, and Sumter and the cities of Orlando, Hollywood, and Panama City Beach.

"Subsequently, Hillsborough County has arranged with Fishkind & Associates to obtain the FIAM, while the Hillsborough City / County Planning Commission has contracted the purchase of an alternative model from Tischler & Associates." (Hillsborough County now has a working FIAM from Fishkind & Associates. The model is under the auspices of the County's Management and Budget Department. We will provide more information about the County's FIAM in a subsequent section of the report.)

Also, in the Highlights section of the NAIOP report, we discussed the differences between Tischler's "marginal approach" to fiscal impact analysis and Fishkind's "per capita approach." (A debate of the approaches at a theoretical level may be a "red herring." The marginal approach is consistent with economic principles. However, at a practical or applied economic level the difference in approach ends up determining the basic input amounts for an analysis of the fiscal impacts. Hence, the two approaches can lead to widely disparate impacts.)

The Highlights go on to state, "In a memorandum dated April 24, 2003, Dr. Fishkind identified three key policy issues relating to the FIAM. ... The issues are 1) FIAM applications, 2) ethics and disclosure and 3) training and certification. ..."

"The [first] issue is whether the FIAM is an appropriate and useful tool at all levels [e.g., macro and micro] and for all types of land use decisions. Dr. Fishkind recommends that the "user community" play a leading role in settling this kind of issue."

Secondly, "A strength of the FIAM ... is that it is implemented in open code format, i.e. a Microsoft Excel Spreadsheet. Thus, an analyst can determine precisely how

the model obtains its results, and thereby evaluate the model's methodology. However, Dr. Fishkind believes that the open code format may also be a weakness of the FIAM, because this makes it easy for "an unscrupulous user to manipulate the results to suit some particular end." He recommends that certified users be held to rigorous ethical standards and subject to full disclosure." (While the Tischler model is also in open code format, accessibility to the code may be limited by ownership or licensing considerations.)

And the third issue, "A weakness of the FIAM is that it requires a certain level of know-how to make the necessary inputs to the model and to obtain reliable results." Dr. Fishkind recognizes this issue and suggests a training and certification program for analysts who would use the FIAM. He writes, "Only the analyses and testimony of certified FIAM analysts should be considered 'competent and substantial evidence' with regard to fiscal impacts in the context of a land-use decision-making process in Florida." (This issue is also applicable to the Tischler model. As Dr. Colie said in the NAIOP report, "I believe that to validate the model's results requires two analysts who independently calibrate the model and run the simulation. If everything is done properly, both analysts should obtain the same results.")

#### Hillsborough County's Fiscal Impact Analysis Model (FIAM)

On April 7, 2004 the Hillsborough County staff (Management and Budget Department) made a report to the Board of County Commissioners regarding the FIAM. The report is located behind **Tab E**.

The report illustrates the FIAM using examples of actual development projects. There are nine illustrations. Results for each development project include related governmental revenues and expenses, and the net effect of a project's long-term fiscal impact. Also, reported is the estimated time required to recover the initial net capital deficit and initial net operating deficit at present value. **For all nine illustrations the discounted 20-year net fiscal impact is positive.**

The report states, "The fiscal impact analysis results for the nine examples *suggests that most residential construction does generate revenue to cover costs reflected in the County's current budget, based on the County's revenue structure.*" [italics in original]

Both in this report and in an email, which the report's author used to transmit the report to CEDR, the crucial issue for evaluation of a fiscal impact model is defined. **The critical issue is the assumed level of services to be provided by government.** In the report, the author concludes that the positive fiscal impact "... suggests existing services can be sustained – although there may be debate whether current service levels are adequate." And, a footnote elaborates on the level of services issue as follows, "If current services are judged inadequate, then existing residents and businesses are not "paying their way" with the existing structure of revenues used to pay for government service and infrastructure." Additionally, in the aforementioned email the author states, "Current

service levels are being funded by a balanced budget, so new growth ought to have a positive impact. On the other hand, if current service levels are deemed inadequate then new growth and for that matter existing development may not be paying their way.”

We interpret this to mean that as long as there is a balanced budget, as required by law, the existing level of services is fully funded. And, the FIAM results indicate that over time (for example, 9 years in the illustration of affordable housing) government’s costs will be fully recovered, if existing levels of service are maintained.

On May 5, 2004 CEDR requested from Hillsborough County staff a copy of version 3 of the FIAM. Staff used version 3 to prepare the previously mentioned report (Tab E) to the Board of County Commissioners. CEDR received the copy of version 3 via email from County staff on May 10, 2004. At the time of this report, we are attempting to replicate the results reported to the County Commissioners and, if successful in replication, we plan to describe, step-by-step, how the results are calculated.

#### The Planning Commission Contracts with Tischler & Associates, Inc.

On September 20, 2002 (Phase I) and again on November 1, 2002 (Phase II) the Planning Commission entered into a “Consultant Agreement” with Tischler & Associates (TA), Inc. TA, the consultant agrees to provide the Planning Commission “fiscal impact evaluations and related activities.” Copies of these agreements are located in **Tab F**. The agreements outline four phases, but apparently only Phases I and II were actually implemented.

The cost of **Phase I** is \$49,600. Phase I includes five tasks. They are:

1. Overview of Fiscal Impact Approaches - \$2,300.
2. Review of Population, Households and Employment Forecast for Trends Scenario - \$1,700.
3. Conduct Level of Service and Cost and Revenue Factor Interviews - \$19,300.
4. Prepare Level of Service and Cost and Revenue Factor Document - \$24,400.
5. Presentation - \$1,900.

Attached to the September 20, 2002 agreement – apparently as received by the TBRC from the Planning Commission – is an internal Planning Commission memorandum, whose subject is “Tischler Contract Billing Invoices Review,” dated September 10, 2003. Significant to this research, the memorandum states, “At this time one product is still pending from Phase I of the contract: Level of Service Cost & Revenue Factors Report at a cost of \$7,320 and the cost of \$1,900 its for (sic) presentation.” Knowledge of the level of service costs and revenue factors are essential to evaluating a fiscal impact model.

The deliverables specified in the September 20, 2002 agreement are:

- A. Phase I – Definition of Levels of Service.  
Task 1 – “White Paper” Discussion of Fiscal Impact Approaches.

- Task 2 – Memorandum Reflecting Comments on Projections for Scenario.
- Task 3 – See Below. (sic)
- Task 4 – Level of Service and Cost and Revenue Factor Document.

There is also a list of deliverables for Phase II, however Phase II is “optional” in the September 20, 2002 agreement.

Some items posted on the Planning Commission’s Internet site seem to be the deliverables for Task 1 under the September 20, 2002 agreement. See **Tab G**. The Internet page is titled “Five Sections of the FIAM” and contains the following:

1. Why a Fiscal Impact Study.
2. Advantages of the Planning Commission Approach.
3. Comparison of Methods.
4. Input data by Fiscal Study Areas.
5. Fiscal Impact Study Areas.

The cost of **Phase II** is \$90,000. Phase II includes four tasks in part A and three tasks in part B, for a total of seven tasks. They are:

- A. Countywide (Macro) Fiscal Impact Analysis.
  1. Design Fiscal Impact Model - \$28,600.
  2. Prepare Fiscal Impact Report - \$16,600.
  3. Presentation of Fiscal Impact Report - \$1,900.
  4. Implementation and Revenue Strategies - \$2,900.
  
- B. Development Review (Micro) Fiscal Impact Model.
  1. Design Development Review Fiscal Impact Model - \$25,900.
  2. Model Reference Manual - \$9,100.
  3. Staff Model Training - \$5,000.

The deliverables specified in the November 1, 2002 agreement are:

Phase II

A. Countywide (Macro) Fiscal Impact Analysis

- Task 1 – See Below. (sic)
- Task 2 – Fiscal Impact Report.
- Task 3 – Appropriate Materials and Graphics.
- Task 4 – Memorandum on Implementation and Revenue Strategies.

B. Development Review (Micro) Fiscal Impact Model

- Task 1 – Turnkey Model Software.
- Task 2 - Supporting Documentation.
- Task 3 – Training.

The (Macro) Fiscal Impact Report is dated August 15, 2003 and is available for download from the Planning Commission’s Internet site. Associated with the report is a press release with a headline that reads, “Report Says Growth Not Paying for Itself in Hillsborough County.” See **Tab H**.

Model Reference Manual

On April 7, 2004 Dr. Colie reviewed the FISCALS Model Reference Manual, dated March 31, 2004, at the Planning Commission’s offices. (The FISCALS model is also called the “micro” model or the Fiscal Impact Research Model (FIRM).) This is a user’s manual for Planning Commission staff.

A notice on the title page indicates FISCALS is a “proprietary fiscal impact analysis software application developed, owned, and licensed by Tischler & Associates, Inc.” The manual is specially tailored to the Planning Commission’s copy of FISCALS and is marked “Copyright October 2003.”

FISCALS is an application, developed as a network of spreadsheet files in Microsoft Excel and Visual Basic for Applications (VBA). The Planning Commission’s model has the file name: Hillsborough Model.xls .

The manual’s table of contents is:

- I. Welcome to FISCALS .....1
  - A. Overview of FISCALS .....1
  - B. Basic Application Operation .....1
  
- II. FISCALS Input / Output Modules .....6
  - A. Module Parameters .....6
  - B. Base Year Demographics Input Module .8
  - C. Scenario Input Module .....9
  - D. Demand Base Module .....11
  - E. Tax Base Module .....13
  - F. Revenue Modules .....15
  - G. Operating Department Input / Output  
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  - A. General Overview .....29
  - B. Outputs .....30
  
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V.	Technical Reference .....	36
A.	Helpful EXCEL Features .....	36
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C.	Direct Entries .....	38
D.	Adding Menu Items .....	39
E.	Vehicle Trip Rates and Trip Adjustment Factors .....	40

The Base Year Demographics Input Module contains the following data: population, housing units, jobs by type, and non-residential floor area.

The Scenario Input Module is also referred to as the Land Use Database. It is in this module where the user inputs the land use, i.e. development proposal, which is to be the subject of the fiscal impact analysis.

**In the manual, the Demand Base Module is called the “guts” of the FISCALS application.** Through linking formulas, this module converts scenario inputs into annual demands. In addition to annual demand changes based on the land use scenario, there are also annual demand changes generated by a demographics projection associated with each scenario. The demands become the basis for calculating future operating and capital costs.

Similar to the calculation of demands, the Tax Base Module converts scenario inputs and demographic projections into the basis for computing future revenues.

The Revenue Modules, Operating Department Input / Output Modules, and the Capital Facilities Input / Output Modules complete the calculations of future costs and revenues associated with a land use scenario and demographic projections. These modules result in a budget summary and other outputs available for the user.

Planning Commission’s Fiscal Impact Research Model (FIRM)

On or about April 11, 2004, the Planning Commission staff promulgated a FIRM Status Report and Demonstration. A copy of the PowerPoint slides for the Demonstration is located behind **Tab I**.

The staff used the Tischler (micro) fiscal impact model (FISCALS) to analyze the following demonstration project:

- Rezoning to Planned Development (PD)
- Area: Brandon
- Type: 490 Single Family Residential
- Unit Size: 1500-2499 square feet
- Taxable Value: \$110,288/unit
- Three absorption scenarios: 80, 100, 120 units/year.

The results of the demonstration were:

- Annual and Cumulative fiscal deficits for both Hillsborough County and School Board
- Cumulative deficit for County: \$6.9 M
- Cumulative deficit for School Board: \$21.9 M
- Combined: \$28.8 M.

On April 19, 2004 Dr. Colie experimented with the FISCALS model for one hour at the Planning Commission's offices. He replicated the Planning Commission staff's demonstration project for the 80 units per year absorption scenario.

The FISCALS model is housed within an Excel spreadsheet with 32 tabs. To initiate a scenario, the analyst opens the "Scenarios" tab. In the manual, this tab is sometimes called the Scenario Input Module and at other times descriptively called the Land Use Profile.

There are two types of scenarios: residential and non-residential. For a scenario, certain data is already in the model and the analyst enters other data. For example, in the case of the Brandon demonstration project the land use profile is:

Single-Family Units

2.71 persons / unit

Assessed value <enter> per unit

Pupil generation rates 0.272 Elem 0.162 Mid 0.162 High

9.57 Vehicle Trips 50% Adjustment Factor

<enter> Unit Annual Absorption.

After visiting the Planning Commission's offices on April 19, 2004, Dr. Colie telephoned a Commission staff person for permission to print out the FIAM's data in each of the model's tabs in order to analyze the Commission's demonstration project. By return telephone call, the staff person notified Dr. Colie that obtaining printouts was possible provided he signed an acknowledgement of the proprietary nature of the model's tabs and pay 15 cents per page. An appointment to visit the Planning Commission's offices was set for April 30, 2004.

At the April 30, 2004 meeting Commission staff asked Dr. Colie to sign a "NOTICE OF LICENSE AGREEMENTS FOR MICRO FISCAL IMPACT MODEL, A/K/A 'FISCALS,'" which is located behind **Tab J**. Dr. Colie stated that he could not sign the Notice without further review and consideration. Hence, he did not obtain the underlying data needed to evaluate the Planning Commission's demonstration project at that time.

On May 10, 2004 the Planning Commission held a workshop about the FIRM. A representative from Tischler & Associates was at the workshop. A copy of his

presentation is located behind **Tab K**. CEDR representative, Mr. Dave Sobush, attended the workshop. His summary report is also in Tab K.

#### Tischler & Associates Promotional Material

In response to his request for information, Dr. Colie received a letter dated April 16, 2004 from Tischler & Associates along with other promotional items. The letter and other items are located behind **Tab L**. Tischler & Associates lists their professional services:

- Fiscal Analysis of Growth Alternatives & Proposed Developments
- Impact Fees
- Revenue Strategies
- Capital Improvement Plans
- Growth Policy Studies
- Market & Economic Feasibility Studies / Economic Development Strategies
- Fiscal and Economic Software.

Of interest is their claim, “TA has prepared over 500 fees for jurisdictions around the country, *none of which has ever been challenged.*” (emphasis added)

#### TBBA Governmental Affairs Committee Meeting

At the invitation of Mr. Don Lombardi, Dr. Colie attended the Tampa Bay Builders Association (TBBA) Governmental Affairs Committee Meeting on May 4, 2004. The meeting’s agenda is located behind **Tab M**. At item V (Roman 5) on the agenda, Dr. Colie described his meetings with Planning Commission staff in order to ascertain information about the FIRM. The gist of Dr. Colie’s remarks was that the working environment at the Planning Commission’s offices was cumbersome and that he did not get printouts of the model’s underlying information upon which its fiscal impacts are predicated. He could not get printouts without first signing a non-disclosure Notice. Dr. Colie was concerned with possible legal or other ramifications of the Notice and did not sign the Notice. (The non-disclosure notice is described above, in the section of this report titled Planning Commission’s Fiscal Impact Research Model (FIRM).) County Administrator, Pat Bean, was also on the meeting’s agenda (See item II, Roman 2.) and was still at the meeting when Dr. Colie made his remarks.

#### Findings

1. We cannot evaluate Tischler & Associates’ (Macro) Fiscal Impact Report because the Level of Service Cost & Revenue Factors Report is not available to us. Attached to the September 20, 2002 agreement between Tischler & Associates and the Planning Commission is an internal Planning Commission memorandum, whose subject is “Tischler Contract Billing Invoices Review,” dated September 10, 2003. Significant to this research, the memorandum states, “At this time one product is still pending

from Phase I of the contract: Level of Service Cost & Revenue Factors Report at a cost of \$7,320 and the cost of \$1,900 its for (sic) presentation.” (See Tab F.)

2. On or about April 11, 2004, the Planning Commission staff promulgated a FIRM Status Report and Demonstration. (See Tab I.) For the demonstration, the staff used the Tischler (Micro) fiscal impact model to analyze a hypothetical planned development project. We attempted to evaluate the results of the demonstration, but were deterred by limited access to the model. (The micro model is complex and cannot be adequately evaluated visually from the computer screen or by making handwritten notes from the screen.) Although the Planning Commission staff made the model available at their offices under their direct supervision, an issue regarding the proprietary nature of the model arose. After requesting permission from the Planning Commission staff to print out data from the model for further evaluation, the staff asked Dr. Colie to sign a non-disclosure agreement. The proposed agreement is at Tab J. Dr. Colie did not sign the agreement and the print outs were not obtained.
  
3. On April 7, 2004 the Hillsborough County staff (Management and Budget Department) made a report to the County Commissioners regarding the Fishkind FIAM. (See Tab E.) The report illustrates nine development projects. On May 5, 2004 we requested from Hillsborough County staff a copy of the FIAM, which was used to generate the nine illustrations. We received the FIAM via email from County staff on May 10, 2004. We are now attempting to replicate the results reported to the County Commissioners and, if successful in replication, we will attempt to describe, step-by-step- how the results are calculated.

<p>The tabs of this report are not available in electronic format. Please send an email request to CEDR to obtain a “hard” copy of a tab.</p>
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