

APPENDIX 4  
Report on the Economic Feasibility, Richard Voith, Ph.D.

**Report on the Economic Feasibility of the Proposed  
St John Marina**

**Richard Voith Ph.D  
President, Econsult Solutions Incorporated**

**February 25, 2014**



---

**Richard Voith**

---

2/25/2015

**Date**

1. My name is Richard P. Voith, Ph.D. I am President and Founding Principal of Econsult Solutions Inc. (ESI), based in Philadelphia, Pennsylvania. I received a Bachelor of Science degree in Economics from Haverford College in 1977 and a Master of Science in Energy Management and Policy from the School of Public Policy and Management of the University of Pennsylvania in 1980. I was awarded a Ph.D. degree in Economics by the University of Pennsylvania in 1986. Prior to my current position, I was Senior Vice President and Principal at Econsult Corporation from 2001 through 2012. Prior to that position, I was an Economic Advisor for the Federal Reserve Bank of Philadelphia, where I was employed from 1987 to 2001.
2. In addition to my current position at ESI, I have been an adjunct professor in the Real Estate Department of the Wharton School of the University of Pennsylvania. I teach courses in Real Estate Economics, Real Estate Investment, Cost Benefit Analysis, and Economic Development there. I have also held appointments in the Department of Business and Public Policy at the Wharton School. In addition, I am a faculty fellow at the University of Pennsylvania Institute for Urban Research and a member of the Counselors of Real Estate.
3. I am the author or co-author of over 40 professional articles, book chapters, and book reviews. A substantial number of these writings deal with the functioning of real estate markets, including analyses of the determinants of real estate value. I frequently provide peer reviews for scholarly articles addressing economic development, transportation, and real estate issues. I was a member of the editorial board of *Real Estate Economics* until 2006. My Curriculum Vitae is attached as Exhibit A of this report.
4. Over the last 2 years at ESI and the preceding eleven years at Econsult Corporation, I have conducted numerous studies that have evaluated the functioning of real estate markets. These engagements have included the assessment of business interruption on property values, the effects of environmental disamenities on real estate markets, as well as investigations into the economic viability of development projects. ESI and its principals have provided economic analysis in cases involving a diverse set of matters including real estate markets, business interruption, local market analysis, transportation, labor market discrimination, personal injury, intellectual property rights, price fixing, taxation, and lost profits.

#### **Assignment**

5. A 145 slip marina is proposed to be developed at Coral Bay, St. John, US Virgin Islands. The development team, led by Summer's End Group, LLC (SEG) produced *The St. John Marina Market Study, Feasibility and Economic Analysis* ("SEG Report"), which argues that the proposed project is economically feasible. I have been asked to evaluate the economic feasibility analysis presented in that study.
6. Other ESI principals and associates, under my direction, have also provided research and analytical support for this report.

7. My Curriculum Vitae, Exhibit A, lists all publications I have authored in the previous ten years and all cases in which I have testified as an expert at trial or by deposition in the previous four years.
8. I have reviewed all materials referenced in this report. Should additional information come to light, I reserve the right to update or modify my opinions.

### **Summary of Findings**

9. The SEG Report developed by SEG provides virtually no quantitative analysis of the projected financial performance of the facility. The SEG report does not address the role of the land based components at all.
10. The SEG Report does not contain a financial pro forma that documents projected revenues, pricing, sales, or vacancies. The SEG Report also does not provide information on construction costs (it does provide a total development cost figure) or operating costs of the facility. It is therefore impossible to know if the project is economically viable based on the information contained in the report. Finally, there is very little information on the financial structure of the arrangement, except that 85 percent of the investment is alleged to come from a US based firm, Techno Marine, USA.<sup>1</sup>
11. While not discussed in the SEG report, the developers of the Marina sought and received a Boating Infrastructure Grant (BIG) from the federal government to support the economics of part of the project. This raises questions as to whether the entire project is economically self-sufficient.
12. There is virtually no discussion of risk in the SEG Report. Yet a project of this scale in this location is subject to significant construction risk, weather-related risk, and market risk. Because the up front development costs, listed as \$22.5 million for the water-based elements and \$12.5 million for the land-based components, for a total of \$35.0 million, evaluation of risks is a crucial element in a market feasibility analysis.
13. While the SEG Report identifies nine separate market segments that are potential customers of the Marina, it does not quantify the potential size of any of the segments, the potential share of each market segment that the Marina expects to capture, or projected trends in any of the market segments. In this respect, the SEG Report is deficient in that it reads more like a marketing strategy than a financial evaluation of the potential markets.

---

<sup>1</sup> See letter dated May 18, 2013 from Jeff Boyd, Anaconda Holdings LLC, contained in the projects application for a Boating Infrastructure Grant (BIG). In that letter, Boyd stated that "Techno Marine USA, by means of a term sheet, is committed to serving as this project's main funding source and has currently committed to funding 85 percent of the projects overall cost. Techno Marine USA will be funding a total of \$26,817,158 upon issuance of permitting and will be the main funding partner for this project through construction into operation." Note that \$26,817,158 is actually 76% of the total cost of \$35 million listed in the feasibility study. Either the total costs are different from those in the feasibility study, Techno Marine is funding less than 85 percent, or Techno Marine has committed additional funds beyond the \$26.8 million.

14. The SEG Report indicates that the proposed Marina will be the only facility on St. John. There is virtually no discussion of the extent of competition on other nearby islands, or even the potential for other marinas to be developed on St. John. The main reference to competition is a general statement that Marina will have “competitive rates” which in some cases are lower than other facilities. No specific rates are cited to support that assertion.
15. There is virtually no discussion of the role of the land based part of the part of the Marina project in its feasibility.

**Economic Feasibility Cannot Be Assessed without a Credible Pro Forma.**

16. The SEG Report states that in order to obtain funding for the St. John Marina, “comprehensive and exhaustive market research and analysis had to be performed repeatedly, along with extensive construction and financial pro formas to prove the viability and eventual success of the project.” I agree that these analyses and data are necessary to convince investors of the viability of the project. However, there is virtually no information on revenue or cost in the SEG Report, and no financial pro formas which are necessary for any economic feasibility evaluation.
17. The SEG Report states that there are five “letters of intent for funding construction and initial operation.” Although these letters are not included in the report, four funding sources can be identified from data provided in the BIG application. By far the dominant funder is Techno Marine, which, according to Anaconda Holdings, has committed to funding 85 percent of the project costs. Techno Marine, according to Anaconda Holdings, will remain a partner through “construction and into operations”. There is no information provided in the documents about the economic relationship between Techno Marine and the Marina developers.
18. Based on their website, Techno Marine is a builder and financier of Marina facilities, but their role in the St. John Marina is not transparent.
19. In order to evaluate the economic feasibility of the proposed St. John Marina, it is necessary to have data on, and projections of pricing, sales, vacancies, seasonality, auxiliary business, and revenue from land side operations. There is no specific information on any of these data in the SEG Report. Without these data, it is impossible to determine the gross revenue stream generated by the Marina and associated facilities.
20. Similarly, information is needed on labor costs, maintenance expenditures, insurance, administration, and a host of other costs projected into the future to determine operating costs over time. This information is similarly not provided in the SEG Report.
21. Without revenue or cost information it is not possible to evaluate the profitability of the Marina under even the simplest financial structure, let alone to determine the project’s internal rate of return. Even if the revenue exceeds costs, the feasibility of the project would

depend on whether the project would generate sufficient return to satisfy private investors in the project.

## **Evaluating Risk**

22. The SEG Report is silent on the evaluation of risk. Because the project requires a large initial investment, any prudent feasibility analysis would examine the source of uncertainty with respect to future revenues and costs. One approach to this analysis is to vary the assumptions used in the financial pro forma and determine the impacts on cash flows and the subsequent impacts on investors. Because the financial pro formas are not contained in the feasibility analysis, it is not possible to evaluate how risks are evaluated in the pro forma.
23. It is clear, however, that there are potential risks that could affect the viability of the project. These include construction delays, weather related delays, and market risks, both boating industry related and financial market related.
24. Construction in the Caribbean islands is expensive and uncertain. Many projects remain unfinished as unexpected costs exceed project budgets. Significant construction delays in a capital intensive project such as the St. John Marina are very expensive. For example, at modest return on investment of just 5%, a 1 year delay in project delivery of the \$35 million project would result in loss of \$1.75 million.
25. Weather poses potential risks for the project. St. John is directly hit by a hurricane an average of every 11 years and indirectly affected by a hurricane every 3 years.<sup>2</sup> If a hurricane were to hit during construction, losses in time and destruction could be considerable. The St. John Marina is likely to experience four hurricanes over its economic life of 40 years, which may, in fact, have a significant influence on the financial feasibility of the project. In the absence of a rigorous pro forma, it is simply not possible to evaluate these weather-related risks.
26. In addition to weather related risks, there are climate-related risks. Global warming and rising sea levels are realities that could affect the viability of the marina over a 40 year horizon. Again, these risks have not been assessed.
27. Markets for boating fluctuate, as evidenced by the decline in boating activity after the 2008 recession which has only recently recovered to earlier levels.<sup>3</sup> Additionally, the cost of capital varies significantly. Currently, the cost of capital is relatively low—but will it remain low through the near future? The market risks and financial markets risks can only be evaluated within the context of a pro forma. Once again, the SEG Report does not allow such an analysis because SEG provides no pro forma.

---

<sup>2</sup> *Hurricane City* (2015)

<sup>3</sup> Barrett, Rick, "Boating Industry Recovers After Sinking During Recession" (2014).

## **Market Analysis and Competition**

28. The SEG Report discusses nine specific market segments that the Marina developers view as potential markets. While the discussion of the market segments seems appropriate as the outline of a market strategy, there is no quantitative information on the magnitude of each segment, the potential revenue derived from each segment, or insight into the growth or decline in each segment. Thus, while the report provides an overview of markets that would be potentially served, it does not provide any information on the importance of the market to the viability of the Marina.
29. For example, one segment identified is the mega-yacht market for which the Marina has 27 slips. Is the mega-yacht market large enough to fill a significant number of those slips? Will the Marina have to discount prices to attract the yachts? Are the facilities attractive enough to attract the yachts? What is the total revenue potential? It is simply impossible to address these questions with the data provided by the report.
30. The same kind of argument can be made for each segment identified by the SEG report. Is the St. John local market a significant source of revenue? Can “Wealthy Puerto Ricans” be enticed to visit the St. John Marina instead of their current favorite? There is no evidence provided to address such questions, which in turn call the conclusions of the SEG Report into question.
31. The SEG Report also anecdotally discusses competing marinas by way of references to relative prices. For example, report indicates that prices will be 16% lower at the Marina for a 90 foot yacht compared to the price at Yacht Haven Grande. It seems unlikely that competing marinas will sit by idly while the St. John Marina captures part of their market. Finally, looking toward the future, competition could come from other locations on St. John, undermining the financial feasibility of the Marina.

## **Summary**

32. The market analysis provided by in the SEG Report essentially boils down to “trust me” because there is insufficient data provide to evaluate feasibility. It should also be noted, however, that the largest identified investor in the BIG application expressly states that it will only invest after obtaining permits so, Techno Marine, has not yet made investments into the property, and the terms under which investment would be made are unknown outside of the development partners. There is no documentation provided in the report or in the BIG application provided by Techno Marine that they actually have invested in the project.

33. It is my opinion as an expert in real estate economics and economic development that the SEG Report is completely inadequate to demonstrate the economic feasibility of the proposed Marina and the need for the Marina.



# RICHARD P. VOITH, PhD, CRE

## Econsult Solutions, Inc.

1435 Walnut Street, Suite 300, Philadelphia, PA 19102  
phone: 215.717.2777 | email: voith@econsultsolutions.com

### CURRENT POSITIONS

---

**President and Principal, Econsult Solutions, Inc.** | Philadelphia, PA (2013 – present)

**Senior Vice President and Principal, Econsult Corporation** | Philadelphia, PA (2001 – 2012)

**Faculty Fellow, University of Pennsylvania Institute for Urban Research** | Philadelphia, PA (2013–present)

### PAST POSITIONS

---

- **Executive Director, Greater Philadelphia Transportation Initiative**, Philadelphia, PA. June 2002-2004.
- **Adjunct Professor, Real Estate Department, The Wharton School, University of Pennsylvania**, Philadelphia, PA, 2001-2002.
- **Adjunct Professor, Business and Public Policy, The Wharton School, University of Pennsylvania**, Philadelphia, PA, 1998-2000, 2003, 2009, 2011
- **Board of Directors, Southeastern Pennsylvania Transportation Authority**, Philadelphia, PA, September 1992 – 2000. (Vice Chairman, February 1996-February 1999).
- **Assistant Director of Research, Public/Private Ventures**, Philadelphia, PA, March 1986-January 1987.
- **Research Assistant, Professors Jere Behrman and Paul Taubman, Department of Economics, University of Pennsylvania**, Philadelphia, PA, June 1981-March 1986.
- **Research Associate, The Futures Group**, Glastonbury, CT, September 1979-May 1981.

### TESTIMONY/DEPOSITION/ARBITRATION

---

- Commonwealth of Pennsylvania Environmental Hearing Board, EHB Docket No. 2012-148-L, Borough of St. Clair v. Commonwealth of Pennsylvania Department of Environmental Protection, and Blyth Township, September 2013.
- United States District Court for the Western District of Michigan, Case no. 1:11-cv-00483, Georgia-Pacific Consumer Products, LP v. NCR Corporation, February 2013. Judge Jonkers ruled favorably, noting "...GP's expert in real estate economics, Dr. Richard Voith persuasively testified...." in his judgment.
- Deposition: Georgia-Pacific Consumer Products, LP v. NCR Corporation, July 2012.



- Deposition: Nora Williams, et al., vs. City of Jacksonville, et al. (2010) Case No. 16-2003-CA-003263, Circuit Court of the Fourth Judicial Circuit in Duval County, FL
- Philadelphia Court of Common Pleas (2008), Goldman v. SEPTA.
- Wallace Township Zoning Review Board (2008), for Greenfield Development Co.
- Hudson County Superior Court (2009), Bloomfield 209 v. Rent Leveling Board

## RELEVANT SKILLS/AFFILIATIONS

---

- Member, Counselors of Real Estate
- Founding Board Member, PENTRANS (Pennsylvanians for Transportation Solutions) 2004-present
- Commission Member, Pennsylvania Transportation Funding and Reform Commission, 2005
- Transportation Research Board—Institute of Medicine Advisory Panel on Transportation, Land Use, Physical Activity and Health, 2003-2005
- Editorial Board, Real Estate Economics, 1999-2006
- NSF Advisory Panel for Transit Cooperative Research Programs 1992-1997
- Invited panels and conferences for groups such as The Brookings Institution, Lincoln Institute for Land Policy, Urban Land Institute, Department of Housing and Urban Development
- Peer Reviewer for Journal of Urban Economics, Real Estate Economics, Journal of Regional Science

## PUBLICATIONS

---

- "The Affordability Challenge: Inclusionary Housing and Community Land Trusts in a Federal System," (2012) in *Value Capture and Land Policies*, Edited by Gregory K. Ingram and Yu-Hung Hong, Lincoln Institute of Land Policy.
- "The Economics of Recovery," (2011) in *Managing Urban Disaster Recovery: Policy, Planning, Concepts And Cases*, Edited by Edward J. Blakely, Eugenie L. Birch, Roland V. Angran and Harou Hayashi, Crisis Response Publications.
- "Rents Have Been Rising, Not Falling, in the Postwar Period," (2010), *Review of Economics and Statistics*, Vol. 3, No. 3, pp. 628-4, with Leonard Nakamura and Theodore Crone.
- "HOPE VI and Neighborhood Economic Development: The Importance of Local Market Dynamics," (2010), *Cityscape*, Vol. 12, No. 1, pp. 99-131, with Sean Zielenbach.
- "Estimating the Local Economic Impacts of HOPE VI," (2010), *Housing Policy Debate*, Vol.20, Issue 3, pp. 485-522, with Sean Zielenbach and Michael Mariano.



- "Urban Growth and Housing Affordability: The Conflict," (2009), *The ANNALS of the American Academy of Political and Social Science*, No. 626 with Susan Wachter.
- "The New Economics of Downtown," (2006) in *New Downtowns: The Future of Urban Centers*, Jonathan R. Oakman, Editor: Princeton University, Policy Research Institute for the Region.
- "Comments on 'The Effects of Urban Rail Transit Expansions: Evidence for Sixteen Cities, 1970-2000'" (2005) *Brookings-Wharton Papers on Urban Affairs*, Edited by Gary Burtless and Janet Rothenberg Pack, Brookings Institution Press.
- "Hedonic Estimates of the Cost of Housing Services: Rental and Owner-Occupied Units," (2005) in *Price and Productivity Measurement*, Edited by W. Erwin Diewert, Bert M. Balk, Dennis Fixler, Kevin J. Fox and Alice O. Nakamura, Trafford Press, with Theodore Crone and Leonard Nakamura.
- "Smart Growth and Affordable Housing" (2004) in *Growth Management and Affordable Housing: Do They Conflict?* Edited by Anthony Downs, Brookings Institution Press, with David L. Crawford.
- "Capitalization of Federal Taxes, the Relative Price of Housing, and Urban Form: Density and Sorting Effects," (2002), *Regional Science and Urban Economics*. Vol.32, No. 6. with Joseph Gyourko.
- "Measuring Housing Services Inflation," (2000) *Journal of Economic and Social Measurement*, Vol. 26, pp. 153-171. with Theodore Crone and Leonard Nakamura.
- "Expectations, Development, and Transportation Investment," Conference Proceedings of "Bridging the Divide" sponsored by the Department of Housing and Urban Development (2000).
- "The Determinants of Metropolitan Development Patterns: What Are the Roles of Preferences, Prices and Public Policies?" (2000) In *Urban-Suburban Interdependencies*, Edited by Rosalind Greenstein and Wim Wiewel, Cambridge: Lincoln Institute of Land Policy.
- "Zoning and the Tax Treatment of Housing," *Brookings-Wharton Papers on Urban Affairs*, Edited by Douglas Gale and Janet Pack (2000) The Brookings Institution.
- "The Suburban Housing Market: The Effects of City and Suburban Employment Growth," (1999) *Real Estate Economics*, Vol. 27, No. 4 (Federal Reserve Bank of Philadelphia Working Paper #96-15).
- "Risk and Return in the Single-Family Housing Market," (1999) *Real Estate Economics*, Vol. 27, No. 1 (Federal Reserve Bank of Philadelphia Working Paper #98-4).
- "Do Suburbs Need Cities?" (1998) *Journal of Regional Science*, Vol. 38, pp. 445-464 (Federal Reserve Bank of Philadelphia Working Paper No. 93-27/R).
- "Parking, Transit and Employment in a CBD," (1998) *Journal of Urban Economics*, Vol. 44, pp. 43-58 (Federal Reserve Bank Working Paper No. 95-11).
- "Fares, Service Levels, and Demographics: What Determines Commuter Rail Ridership in the Long Run," (1997) *Journal of Urban Economics* Vol. 41 pp.176-97 (Federal Reserve Bank of Philadelphia Working Paper No. 94-21).
- "The Effects of Exchange Rate and Relative Productivity Changes on U.S. Industrial Output at the State Level" (1994) *Urban Studies*, Vol. 31 pp. 219-232 (Federal Reserve Bank of Philadelphia Working Paper, No. 91-16).

- "Can Regionalization of Local Public Services Increase a Region's Wealth?" (1993) *Journal of Regional Science*, Vol. 33, No. 1, pp. 279-301, (Federal Reserve Bank of Philadelphia Working Paper, No. 90-17, with James McAndrews).
- "Leasing as a Lottery: Implications for Rational Building Surges and Increasing Vacancies" (1993), *AREUEA*, Vol. 21, No. 1, (Federal Reserve Bank of Philadelphia Working Paper, No. 92-10, with Joseph Gyourko).
- "Estimating House Price Appreciation: A Comparison of Methods" (1992) *Journal of Housing Economics*, Vol. 2, pp. 324-338. (Federal Reserve Bank Working Paper, No. 92-21 with Theodore M. Crone).
- "Changing Capitalization of CBD-Oriented Transportation Systems: Evidence from Philadelphia, 1970-1988," (1993) *Journal of Urban Economics*, Vol. 33, pp. 361-76. (Federal Reserve Bank of Philadelphia Working Paper, No. 91-19).
- "Accounting for Differences in Aggregate State Productivity" (1992) *Regional Science and Urban Economics*, Vol. 22, No. 4, pp. 597-618 (Federal Reserve Bank of Philadelphia Working Paper No. 90-1, with Gerald Carlino).
- "Local and National Components in House Appreciation" (1992) *Journal of Urban Economics*, Vol 32, pp. 52-69. (Federal Reserve Bank of Philadelphia Working Paper No. 90-10, with Joseph Gyourko).
- "A Note on Natural Office Vacancy Rates" (1992) *Journal of Urban Economics*, Vol. 31, pp. 138-139.
- "The Long Run Elasticity of Demand for Commuter Rail Transportation" (1991) *Journal of Urban Economics*, Vol 30, pp. 360-372, (Federal Reserve Bank of Philadelphia Working Paper No. 87-18: "Commuter Rail Ridership: the Long and Short Haul").
- "Transportation, Sorting, and House Values," (1991), *AREUEA*, Vol. 19, pp. 117-137 (Federal Reserve Bank of Philadelphia Working Paper No. 90-22/R).
- "Capitalization of Local and Regional Attributes into Wages and Rents: Differences Across Residential, Commercial and Mixed-Use Communities" (1991), *Journal of Regional Science*, Vol. 31, pp. 127-145. (Federal Reserve Bank of Philadelphia Working Paper No. 87-18: "Compensating Variation in Wages and Rents").
- "Hedonic Price Functions and Home ownership Capitalization Rates" (1991), *Journal of Urban Economics*, Vol. 30, pp. 100-111, with Peter Linneman (Federal Reserve Bank of Philadelphia Working Paper No. 88-6).
- "Regional Impacts of Exchange Rate Movements" (1990) *Regional Science Perspectives*, Vol. 20, No. 1, with Gerald Carlino and Brian Cody (Federal Reserve Bank of Philadelphia Working Paper No. 90-6).
- "Natural Vacancy Rates and the Persistence of Shocks in the U.S. Office Market" (1988) *Journal of the American Real Estate and Urban Economics Association*, Vol. 16, No. 4, with Theodore M. Crone (Federal Reserve Bank of Philadelphia Working Paper No. 88-4).
- "Would Mortgage Borrowers Benefit from the Provision of APR Schedules?" (1985) *Housing Finance Review*, Vol. 4, pp. 569-576, with Peter Linneman.
- "The California Conservation Corps: and Analysis of Short-term Impacts on Participants" (1987) *Public/Private Ventures*, with Wendy Wolf and Sally Leiderman.

- "The California Conservation Corps: A Report on Attrition" (1986) Public/Private Ventures, with Sally Leiderman.

### ***Selected Consulting Publications***

- "The Development Impact of the East River Ferry," Submitted to Steer Davies Gleave for the New York City Economic Development Corporation, November 2013, with Adam Ozimek.
- "The Impacts of SEPTA Regional Rail Service on Suburban House Prices," Submitted to SEPTA, October 2013, with Dan Miles.
- "Understanding SEPTA's Statewide Economic Value," Submitted to SEPTA, with Economy League of Greater Philadelphia (2013).
- "Review of Location Affordability Index Housing Cost Model," Submitted to the Manhattan Strategy Group and the Department of Housing and Urban Development, with Adam Ozimek and Susan Wachter (Penn Institute for Urban Research) (2012)
- "Review of the Center for Neighborhood Technology's Housing and Transportation Affordability Index," Submitted to the Manhattan Strategy Group and the Department of Housing and Urban Development, with Susan Wachter (Penn Institute for Urban Research) (2012)
- "Vacant Land Management in Philadelphia: The Costs of the Current System and the Benefits of Reform," Submitted to the Philadelphia Redevelopment Authority and the Philadelphia Association of Community Development Corporations, (With Lee Huang, September 2010.)
- "The Economic Impact of Digital Exclusion," Commissioned by the Ford Foundation (With Lee Huang and the Digital Impact Group, March 2010).
- "Allocating Growth to Municipalities," Projection of Municipal Housing and Employment Growth for All Municipalities in New Jersey in support of development of new affordable housing regulations by the New Jersey Council on Affordable Housing (January 2008).
- "Compensatory Benefits to Developers for Provision of Affordable Housing." Prepared for the New Jersey Council on Affordable Housing (With Lee Huang and Stephen P. Mullin, December 2007).
- "Counting Jobs at the Local Level" This project for the New Jersey Council on Affordable Housing developed a survey based methodology for evaluating the employment associated with commercial buildings (with Lee Huang and The Reed Group, December 2007).
- "Estimating the Degree to which Filtering Is a Secondary Source of Affordable Housing." Prepared for New Jersey Council on Affordable Housing (Kevin Gillen, principle author, November 2007).
- "Analysis of Proposed Greenfield & Co. Development vs. By-Right Development for Wallace Township, PA. This analysis evaluated the economic and fiscal impacts of the proposed Greenfield development. The analysis was conducted in the context of the complex zoning and environmental constraints associated with the development site. (October 2007).
- "Dynamic Neighborhood Taxonomy," Analysis of the evolution of real estate prices and determinants of change at the neighborhood level for RW Ventures (2007).
- "Transit-Oriented Development in Philadelphia: Using a Proven Strategy to Create More Vibrant, Livable Neighborhoods," Prepared for Neighborhoods Now (With Lee Huang, October 2007).



- "Transportation Needs Assessment and Financial Analysis in Pennsylvania," Prepared for Delaware Valley Regional Planning Commission (With Lee Huang, June 2007).
- "Evaluating the Economic and Fiscal Impacts of SEPTA Service Cuts and Fare Increases," Analysis prepared for the Economy League of Greater Philadelphia. This work was used by the Economy League to produce *The Price of Inaction: An Analysis of Economic Impacts Associated with SEPTA's FY 2008 Operating Budget "Plan B" Alternative* (May 2007).
- "Assessing the Benefits of Public Housing," Prepared for the Council on Large Public Housing Authorities (January 2007).
- "Philadelphia Tax Abatement Analysis," Prepared for the Building Industry Association, this comprehensive study examines the economic and fiscal impacts of Philadelphia's tax abatement program. (With Stephen P. Mullin, Kevin Gillen and David L. Crawford, September 2006).
- "Potential Fiscal Impacts of the Proposed Development on the Borough of Haddonfield," prepared for Bancroft Nuero Health (October 2006)
- "Downtown Strategic Development Plan," prepared by Hillier Architecture for the City of Manchester, NH. Econsult Corporation provided economic and strategic analysis (December 2005).
- "Pine Grove Landfill Pad 12 Expansion Harms-Benefit Analysis," Prepared for Pine Grove Landfill Inc. (June 2005).
- "Philadelphia City Tax Structure and the Metropolitan Economy," Prepared for the Pennsylvania Economy League. (2004).
- "Choosing the Best Mix of Taxes for Philadelphia: An Econometric Analysis of the Impacts of Tax Rates on Tax Bases, Tax Revenue, and the Private Economy," Final Report to the Philadelphia Tax Reform Commission (With John DeI Roccoli and David L. Crawford, October 2003).
- "The Funding System for Surface Transportation: Implications for the Philadelphia Region," (February 2003) with Kevin Babyak, David L. Crawford, and Peter Javasic. Prepared for the Greater Philadelphia Transportation Initiative.
- "Developing a Strategic Framework for Assessing the Potential of Commercial Corridors" (2003) with the Pennsylvania Economy League, Funded by the William Penn Foundation.
- "Working Together to Fix the Pennsylvania Convention Center," (June 2002) with Bernard A. Anderson, Peter Cappelli, and David L. Crawford. Prepared for the Pennsylvania Convention Center Authority.
- "Philadelphia Tax Rates and Their Relationship to Tax Bases and Tax Revenues," (February 2002). Prepared for the Pennsylvania Economy League.
- "An Evaluation of the Impacts on Commuter Rail Operators and Commuters of a Shift in Maintenance Costs from Amtrak to the Commuter Authorities," (January, 2002) Prepared for Amtrak.

### ***Reports in Support of Litigation***

- *RJ Florig v. Redevelopment Authority of Montgomery County, et al, Civil Action – 06 – 1671* "Report on Alleged Damages to R&J Holdings and RJ Florig Industrial Company" (December 2013, Rebuttal Report, February 2014).



- "Report on the Economic Feasibility of the Proposed St John Marina" A review of *The St. John Marina Market Study, Feasibility and Economic Analysis* produced by Summer's End Group, LLC (January 2015).
- "Review of Estimated Economic Impacts of the Proposed St John Marina" A further review of *The St. John Marina Market Study, Feasibility and Economic Analysis* produced by Summer's End Group, LLC (February 2015).
- *Georgia-Pacific Consumer Products LP, et al., v. NCR Corporation, et al.* "Economic Analysis of the 1956 Lease Between St. Regis and Thor Corporation for the Bryant Paper Mill in Kalamazoo, Michigan." In the United States District Court for the Western District of Michigan. Expert report prepared for Georgia-Pacific, June 2012.
- *Tower v. Lexington Insurance.* "An Analysis of Aria Condominium Sales in the Context of the Center City Philadelphia Condominium Market," Expert report prepared for Lexington Insurance. This report provided a detailed evaluation of the condominium market in Center City Philadelphia (March 2008).
- "Updated Projected Economic Impacts of the Proposed Brads C&D Landfill" (October 2007).
- *Goldman v. SEPTA.* These reports prepared for SEPTA evaluate the role of Pennsylvania in the viability of SEPTA and the importance of SEPTA to the state economy. This work was in support of SEPTA's claim of sovereign immunity in a FELA case. (June 2007, Rebuttal Report, August 2007).
- *Holt Cigar et al. v. City of Philadelphia et al.* Report prepared for the Plaintiff analyzing the impact of legislation on the cigar industry and consumers. (January 2007).
- *Toman v. Alliance Landfill Inc.* "Impacts of the Alliance Landfill on Property Values in Taylor, Old Forge and Moosic Boroughs," Expert Report Prepared for Alliance Landfill Inc. (January 2006).
- *Toman v. Alliance Landfill Inc.* "An Assessment of the Property Value Impacts of the Alliance Landfill Expansion Project," Expert Report prepared for Alliance Landfill Inc. (June 2005).
- "Rent Control in Morristown, New Jersey," Expert Report prepared for Wolf-Block for plaintiffs in opposition to the Township of Morristown (November 2004).
- *Rodriguez, et al. v. Ford Motor Credit Company* (No. 01 C 8526), "Analyzing the Disparate Impact Produced by Ford Motor Credit Company's Finance Charge Markup Policy," (May 2002).

### **Federal Reserve Publications**

- "Has Suburbanization Diminished the Importance of Access to Center City?" (2000) Business Review, May/June.
- Does the Tax Treatment of Housing Affect the Pattern of Metropolitan Development?" (1999) Business Review, March/April.
- "Does the Tax Treatment of Housing Create an Incentive for Exclusionary Zoning and Increased Decentralization?" Federal Reserve Bank of Philadelphia Working Paper #99-22.
- "Measuring Housing Services Inflation," (1998) Federal Reserve Bank of Philadelphia Working Paper # 99-9R, with Theodore Crone and Leonard Nakamura.
- "The Tax Treatment of Housing: Its Effects on Bounded and Unbounded Communities," Federal Reserve Bank of Philadelphia Working Paper # 98-23, with Joseph Gyourko.
- "Transportation Investments in the Philadelphia Metropolitan Area: Who Benefits? Who Pays? And



What Are the Consequences?" Federal Reserve Bank of Philadelphia Working Paper # 98-7.

- "The Downtown Parking Syndrome: Does Curing the Illness Kill the Patient?" (1998) Business Review, January/February.
- "Does the U.S. Tax Treatment of Housing Promote Suburbanization and Central City Decline," (1997) Federal Reserve Bank of Philadelphia Working Paper # 97-13.
- "The Suburban Housing Market: The Effects of City and Suburban Job Growth" (1996) Business Review, Federal Reserve Bank of Philadelphia, November/December.
- "Central City Decline: Regional or Neighborhood Solutions?" (1996), Business Review, Federal Reserve Bank of Philadelphia, March/April.
- "Public Transit: Realizing Its Potential," (1994) Business Review, Federal Reserve Bank of Philadelphia, September/October.
- "City and Suburban Growth: Substitutes or Compliments?" (1992) Business Review, Federal Reserve Bank of Philadelphia, September/October.
- "Is Access to Center City Still Valuable?" (1991) Business Review, Federal Reserve Bank of Philadelphia, July/August.
- "Property Taxes, Home Ownership Capitalization Rates, and Housing Consumption" (1991) Federal Reserve Bank of Philadelphia Working Paper, No. 91-13.
- "Consumer Choice With State-Dependent Uncertainty about Product Quality: Late Trains and Commuter Rail Ridership" (1989) Federal Reserve Bank of Philadelphia Working Paper No. 90-7.
- "Unequal Subsidies in Highway Investment: What Are the Consequences" (1989) Business Review, Philadelphia Federal Reserve Bank, November/December.
- "Concentration, Prices, and Output in the Automobile Industry" (1988) Federal Reserve Bank of Philadelphia Working Paper No. 88-6, with Peter Linneman.
- "Commuter Rail Ridership" (1987) Business Review, Federal Reserve Bank of Philadelphia, November/December.

### **Book Review**

- Dynamics of Office Markets: Empirical Findings and Research Issues, by John M. Clapp, 1993. American Real Estate and Urban Economics Association Monograph Series, No. 1: Washington: Urban Institute Press.

## EDUCATION

---

**University of Pennsylvania, Philadelphia, PA**

Ph.D. Economics, 1986

Dissertation Fellowship: Mellon Seminar on the Future of Cities, 1985.

M.S. Energy Management and Policy, 1980, School of Public and Urban Policy,  
NCAA Scholarship for Graduate Study.





**Haverford College**, Haverford, PA.

B.A. Economics, 1977

Scholar-Athlete of the Year, 1977,

First Team All-American Basketball, Division III, 1977.



# RICHARD P. VOITH, PhD, CRE

## Econsult Solutions, Inc.

1435 Walnut Street, Suite 300, Philadelphia, PA 19102  
phone: 215.717.2777 | email: voith@econsultsolutions.com

### CURRENT POSITIONS

---

**President and Principal, Econsult Solutions, Inc.** | Philadelphia, PA (2013 – present)

**Senior Vice President and Principal, Econsult Corporation** | Philadelphia, PA (2001 – 2012)

**Faculty Fellow, University of Pennsylvania Institute for Urban Research** | Philadelphia, PA (2013–present)

### PAST POSITIONS

---

- **Executive Director, Greater Philadelphia Transportation Initiative**, Philadelphia, PA. June 2002-2004.
- **Adjunct Professor, Real Estate Department, The Wharton School, University of Pennsylvania**, Philadelphia, PA, 2001-2002.
- **Adjunct Professor, Business and Public Policy, The Wharton School, University of Pennsylvania**, Philadelphia, PA, 1998-2000, 2003, 2009, 2011
- **Board of Directors, Southeastern Pennsylvania Transportation Authority**, Philadelphia, PA, September 1992 – 2000. (Vice Chairman, February 1996-February 1999).
- **Assistant Director of Research, Public/Private Ventures**, Philadelphia, PA, March 1986-January 1987.
- **Research Assistant, Professors Jere Behrman and Paul Taubman, Department of Economics, University of Pennsylvania**, Philadelphia, PA, June 1981-March 1986.
- **Research Associate, The Futures Group**, Glastonbury, CT, September 1979-May 1981.

### TESTIMONY/DEPOSITION/ARBITRATION

---

- Commonwealth of Pennsylvania Environmental Hearing Board, EHB Docket No. 2012-148-L, Borough of St. Clair v. Commonwealth of Pennsylvania Department of Environmental Protection, and Blyth Township, September 2013.
- United States District Court for the Western District of Michigan, Case no. 1:11-cv-00483, Georgia-Pacific Consumer Products, LP v. NCR Corporation, February 2013. Judge Jonkers ruled favorably, noting "...GP's expert in real estate economics, Dr. Richard Voith persuasively testified...." in his judgment.
- Deposition: Georgia-Pacific Consumer Products, LP v. NCR Corporation, July 2012.



- Deposition: Nora Williams, et al., vs. City of Jacksonville, et al. (2010) Case No. 16-2003-CA-003263, Circuit Court of the Fourth Judicial Circuit in Duval County, FL
- Philadelphia Court of Common Pleas (2008), Goldman v. SEPTA.
- Wallace Township Zoning Review Board (2008), for Greenfield Development Co.
- Hudson County Superior Court (2009), Bloomfield 209 v. Rent Leveling Board

## RELEVANT SKILLS/AFFILIATIONS

---

- Member, Counselors of Real Estate
- Founding Board Member, PENTRANS (Pennsylvanians for Transportation Solutions) 2004-present
- Commission Member, Pennsylvania Transportation Funding and Reform Commission, 2005
- Transportation Research Board—Institute of Medicine Advisory Panel on Transportation, Land Use, Physical Activity and Health, 2003-2005
- Editorial Board, Real Estate Economics, 1999-2006
- NSF Advisory Panel for Transit Cooperative Research Programs 1992-1997
- Invited panels and conferences for groups such as The Brookings Institution, Lincoln Institute for Land Policy, Urban Land Institute, Department of Housing and Urban Development
- Peer Reviewer for Journal of Urban Economics, Real Estate Economics, Journal of Regional Science

## PUBLICATIONS

---

- "The Affordability Challenge: Inclusionary Housing and Community Land Trusts in a Federal System," (2012) in *Value Capture and Land Policies*, Edited by Gregory K. Ingram and Yu-Hung Hong, Lincoln Institute of Land Policy.
- "The Economics of Recovery," (2011) in *Managing Urban Disaster Recovery: Policy, Planning, Concepts And Cases*, Edited by Edward J. Blakely, Eugenie L. Birch, Roland V. Anglan and Harou Hayashi, Crisis Response Publications.
- "Rents Have Been Rising, Not Falling, in the Postwar Period," (2010), *Review of Economics and Statistics*, Vol. 3, No. 3, pp. 628-4, with Leonard Nakamura and Theodore Crone.
- "HOPE VI and Neighborhood Economic Development: The Importance of Local Market Dynamics," (2010), *Cityscape*, Vol. 12, No. 1, pp. 99-131, with Sean Zielenbach.
- "Estimating the Local Economic Impacts of HOPE VI," (2010), *Housing Policy Debate*, Vol.20, Issue 3, pp. 485-522, with Sean Zielenbach and Michael Mariano.



- "Urban Growth and Housing Affordability: The Conflict," (2009), *The ANNALS of the American Academy of Political and Social Science*, No. 626 with Susan Wachter.
- "The New Economics of Downtown," (2006) in *New Downtowns: The Future of Urban Centers*, Jonathan R. Oakman, Editor: Princeton University, Policy Research Institute for the Region.
- "Comments on 'The Effects of Urban Rail Transit Expansions: Evidence for Sixteen Cities, 1970-2000'" (2005) *Brookings-Wharton Papers on Urban Affairs*, Edited by Gary Burtless and Janet Rothenberg Pack, Brookings Institution Press.
- "Hedonic Estimates of the Cost of Housing Services: Rental and Owner-Occupied Units," (2005) in *Price and Productivity Measurement*, Edited by W. Erwin Diewert, Bert M. Balk, Dennis Fixler, Kevin J. Fox and Alice O. Nakamura, Trafford Press, with Theodore Crone and Leonard Nakamura.
- "Smart Growth and Affordable Housing" (2004) in *Growth Management and Affordable Housing: Do They Conflict?* Edited by Anthony Downs, Brookings Institution Press, with David L. Crawford.
- "Capitalization of Federal Taxes, the Relative Price of Housing, and Urban Form: Density and Sorting Effects," (2002), *Regional Science and Urban Economics*. Vol.32, No. 6. with Joseph Gyourko.
- "Measuring Housing Services Inflation," (2000) *Journal of Economic and Social Measurement*, Vol. 26, pp. 153-171. with Theodore Crone and Leonard Nakamura.
- "Expectations, Development, and Transportation Investment," Conference Proceedings of "Bridging the Divide" sponsored by the Department of Housing and Urban Development (2000).
- "The Determinants of Metropolitan Development Patterns: What Are the Roles of Preferences, Prices and Public Policies?" (2000) In *Urban-Suburban Interdependencies*, Edited by Rosalind Greenstein and Wim Wiewel, Cambridge: Lincoln Institute of Land Policy.
- "Zoning and the Tax Treatment of Housing," *Brookings-Wharton Papers on Urban Affairs*, Edited by Douglas Gale and Janet Pack (2000) The Brookings Institution.
- "The Suburban Housing Market: The Effects of City and Suburban Employment Growth," (1999) *Real Estate Economics*, Vol. 27, No. 4 (Federal Reserve Bank of Philadelphia Working Paper #96-15).
- "Risk and Return in the Single-Family Housing Market," (1999) *Real Estate Economics*, Vol. 27, No. 1 (Federal Reserve Bank of Philadelphia Working Paper #98-4).
- "Do Suburbs Need Cities?" (1998) *Journal of Regional Science*, Vol. 38, pp. 445-464 (Federal Reserve Bank of Philadelphia Working Paper No. 93-27/R).
- "Parking, Transit and Employment in a CBD," (1998) *Journal of Urban Economics*, Vol. 44, pp. 43-58 (Federal Reserve Bank Working Paper No. 95-11).
- "Fares, Service Levels, and Demographics: What Determines Commuter Rail Ridership in the Long Run," (1997) *Journal of Urban Economics* Vol. 41 pp.176-97 (Federal Reserve Bank of Philadelphia Working Paper No. 94-21).
- "The Effects of Exchange Rate and Relative Productivity Changes on U.S. Industrial Output at the State Level" (1994) *Urban Studies*, Vol. 31 pp. 219-232 (Federal Reserve Bank of Philadelphia Working Paper, No. 91-16).



- "Can Regionalization of Local Public Services Increase a Region's Wealth?" (1993) *Journal of Regional Science*, Vol. 33, No. 1, pp. 279-301, (Federal Reserve Bank of Philadelphia Working Paper, No. 90-17, with James McAndrews).
- "Leasing as a Lottery: Implications for Rational Building Surges and Increasing Vacancies" (1993), *AREUEA*, Vol. 21, No. 1, (Federal Reserve Bank of Philadelphia Working Paper, No. 92-10. with Joseph Gyourko).
- "Estimating House Price Appreciation: A Comparison of Methods" (1992) *Journal of Housing Economics*, Vol. 2, pp. 324-338. (Federal Reserve Bank Working Paper, No. 92-21 with Theodore M. Crone).
- "Changing Capitalization of CBD-Oriented Transportation Systems: Evidence from Philadelphia, 1970-1988," (1993) *Journal of Urban Economics*, Vol. 33, pp. 361-76. (Federal Reserve Bank of Philadelphia Working Paper, No. 91-19).
- "Accounting for Differences in Aggregate State Productivity" (1992) *Regional Science and Urban Economics*, Vol. 22, No. 4, pp. 597-618 (Federal Reserve Bank of Philadelphia Working Paper No. 90-1, with Gerald Carlino).
- "Local and National Components in House Appreciation" (1992) *Journal of Urban Economics*, Vol 32, pp. 52-69. (Federal Reserve Bank of Philadelphia Working Paper No. 90-10, with Joseph Gyourko).
- "A Note on Natural Office Vacancy Rates" (1992) *Journal of Urban Economics*, Vol. 31, pp. 138-139.
- "The Long Run Elasticity of Demand for Commuter Rail Transportation" (1991) *Journal of Urban Economics*, Vol 30, pp. 360-372, (Federal Reserve Bank of Philadelphia Working Paper No. 87-18: "Commuter Rail Ridership: the Long and Short Haul").
- "Transportation, Sorting, and House Values," (1991), *AREUEA*, Vol. 19, pp. 117-137 (Federal Reserve Bank of Philadelphia Working Paper No. 90-22/R).
- "Capitalization of Local and Regional Attributes into Wages and Rents: Differences Across Residential, Commercial and Mixed-Use Communities" (1991), *Journal of Regional Science*, Vol. 31, pp. 127-145. (Federal Reserve Bank of Philadelphia Working Paper No. 87-18: "Compensating Variation in Wages and Rents").
- "Hedonic Price Functions and Home ownership Capitalization Rates" (1991), *Journal of Urban Economics*, Vol. 30, pp. 100-111, with Peter Linneman (Federal Reserve Bank of Philadelphia Working Paper No. 88-6).
- "Regional Impacts of Exchange Rate Movements" (1990) *Regional Science Perspectives*, Vol. 20, No. 1, with Gerald Carlino and Brian Cody (Federal Reserve Bank of Philadelphia Working Paper No. 90-6).
- "Natural Vacancy Rates and the Persistence of Shocks in the U.S. Office Market" (1988) *Journal of the American Real Estate and Urban Economics Association*, Vol. 16, No. 4, with Theodore M. Crone (Federal Reserve Bank of Philadelphia Working Paper No. 88-4).
- "Would Mortgage Borrowers Benefit from the Provision of APR Schedules?" (1985) *Housing Finance Review*, Vol. 4, pp. 569-576, with Peter Linneman.
- "The California Conservation Corps: and Analysis of Short-term Impacts on Participants" (1987) *Public/Private Ventures*, with Wendy Wolf and Sally Leiderman.

- "The California Conservation Corps: A Report on Attrition" (1986) Public/Private Ventures, with Sally Leiderman.

### ***Selected Consulting Publications***

- "The Development Impact of the East River Ferry," Submitted to Steer Davies Gleave for the New York City Economic Development Corporation, November 2013, with Adam Ozimek.
- "The Impacts of SEPTA Regional Rail Service on Suburban House Prices," Submitted to SEPTA, October 2013, with Dan Miles.
- "Understanding SEPTA's Statewide Economic Value," Submitted to SEPTA, with Economy League of Greater Philadelphia (2013).
- "Review of Location Affordability Index Housing Cost Model," Submitted to the Manhattan Strategy Group and the Department of Housing and Urban Development, with Adam Ozimek and Susan Wachter (Penn Institute for Urban Research) (2012)
- "Review of the Center for Neighborhood Technology's Housing and Transportation Affordability Index," Submitted to the Manhattan Strategy Group and the Department of Housing and Urban Development, with Susan Wachter (Penn Institute for Urban Research) (2012)
- "Vacant Land Management in Philadelphia: The Costs of the Current System and the Benefits of Reform," Submitted to the Philadelphia Redevelopment Authority and the Philadelphia Association of Community Development Corporations, (With Lee Huang, September 2010.)
- "The Economic Impact of Digital Exclusion," Commissioned by the Ford Foundation (With Lee Huang and the Digital Impact Group, March 2010).
- "Allocating Growth to Municipalities," Projection of Municipal Housing and Employment Growth for All Municipalities in New Jersey in support of development of new affordable housing regulations by the New Jersey Council on Affordable Housing (January 2008).
- "Compensatory Benefits to Developers for Provision of Affordable Housing." Prepared for the New Jersey Council on Affordable Housing (With Lee Huang and Stephen P. Mullin, December 2007).
- "Counting Jobs at the Local Level" This project for the New Jersey Council on Affordable Housing developed a survey based methodology for evaluating the employment associated with commercial buildings (with Lee Huang and The Reed Group, December 2007).
- "Estimating the Degree to which Filtering Is a Secondary Source of Affordable Housing." Prepared for New Jersey Council on Affordable Housing (Kevin Gillen, principle author, November 2007).
- "Analysis of Proposed Greenfield & Co. Development vs. By-Right Development for Wallace Township, PA. This analysis evaluated the economic and fiscal impacts of the proposed Greenfield development. The analysis was conducted in the context of the complex zoning and environmental constraints associated with the development site. (October 2007).
- "Dynamic Neighborhood Taxonomy," Analysis of the evolution of real estate prices and determinants of change at the neighborhood level for RW Ventures (2007).
- "Transit-Oriented Development in Philadelphia: Using a Proven Strategy to Create More Vibrant, Livable Neighborhoods," Prepared for Neighborhoods Now (With Lee Huang, October 2007).



- "Transportation Needs Assessment and Financial Analysis in Pennsylvania," Prepared for Delaware Valley Regional Planning Commission (With Lee Huang, June 2007).
- "Evaluating the Economic and Fiscal Impacts of SEPTA Service Cuts and Fare Increases," Analysis prepared for the Economy League of Greater Philadelphia. This work was used by the Economy League to produce *The Price of Inaction: An Analysis of Economic Impacts Associated with SEPTA's FY 2008 Operating Budget "Plan B" Alternative* (May 2007).
- "Assessing the Benefits of Public Housing," Prepared for the Council on Large Public Housing Authorities (January 2007).
- "Philadelphia Tax Abatement Analysis," Prepared for the Building Industry Association, this comprehensive study examines the economic and fiscal impacts of Philadelphia's tax abatement program. (With Stephen P. Mullin, Kevin Gillen and David L. Crawford, September 2006).
- "Potential Fiscal Impacts of the Proposed Development on the Borough of Haddonfield," prepared for Bancroft Nuero Health (October 2006)
- "Downtown Strategic Development Plan," prepared by Hillier Architecture for the City of Manchester, NH. Econsult Corporation provided economic and strategic analysis (December 2005).
- "Pine Grove Landfill Pad 12 Expansion Harms-Benefit Analysis," Prepared for Pine Grove Landfill Inc. (June 2005).
- "Philadelphia City Tax Structure and the Metropolitan Economy," Prepared for the Pennsylvania Economy League. (2004).
- "Choosing the Best Mix of Taxes for Philadelphia: An Econometric Analysis of the Impacts of Tax Rates on Tax Bases, Tax Revenue, and the Private Economy," Final Report to the Philadelphia Tax Reform Commission (With John DeRoccoli and David L. Crawford, October 2003).
- "The Funding System for Surface Transportation: Implications for the Philadelphia Region," (February 2003) with Kevin Babyak, David L. Crawford, and Peter Javasic. Prepared for the Greater Philadelphia Transportation Initiative.
- "Developing a Strategic Framework for Assessing the Potential of Commercial Corridors" (2003) with the Pennsylvania Economy League, Funded by the William Penn Foundation.
- "Working Together to Fix the Pennsylvania Convention Center," (June 2002) with Bernard A. Anderson, Peter Cappelli, and David L. Crawford. Prepared for the Pennsylvania Convention Center Authority.
- "Philadelphia Tax Rates and Their Relationship to Tax Bases and Tax Revenues," (February 2002). Prepared for the Pennsylvania Economy League.
- "An Evaluation of the Impacts on Commuter Rail Operators and Commuters of a Shift in Maintenance Costs from Amtrak to the Commuter Authorities," (January, 2002) Prepared for Amtrak.

### ***Reports in Support of Litigation***

- *RJ Florig v. Redevelopment Authority of Montgomery County, et al, Civil Action – 06 – 1671* "Report on Alleged Damages to R&J Holdings and RJ Florig Industrial Company" (December 2013, Rebuttal Report, February 2014).



- "Report on the Economic Feasibility of the Proposed St John Marina" A review of *The St. John Marina Market Study, Feasibility and Economic Analysis* produced by Summer's End Group, LLC (January 2015).
- "Review of Estimated Economic Impacts of the Proposed St John Marina" A further review of *The St. John Marina Market Study, Feasibility and Economic Analysis* produced by Summer's End Group, LLC (February 2015).
- *Georgia-Pacific Consumer Products LP, et al., v. NCR Corporation, et al.* "Economic Analysis of the 1956 Lease Between St. Regis and Thor Corporation for the Bryant Paper Mill in Kalamazoo, Michigan." In the United States District Court for the Western District of Michigan. Expert report prepared for Georgia-Pacific, June 2012.
- *Tower v. Lexington Insurance.* "An Analysis of Aria Condominium Sales in the Context of the Center City Philadelphia Condominium Market," Expert report prepared for Lexington Insurance. This report provided a detailed evaluation of the condominium market in Center City Philadelphia (March 2008).
- "Updated Projected Economic Impacts of the Proposed Brads C&D Landfill" (October 2007).
- *Goldman v. SEPTA.* These reports prepared for SEPTA evaluate the role of Pennsylvania in the viability of SEPTA and the importance of SEPTA to the state economy. This work was in support of SEPTA's claim of sovereign immunity in a FELA case. (June 2007, Rebuttal Report, August 2007).
- *Holt Cigar et al. v. City of Philadelphia et al.* Report prepared for the Plaintiff analyzing the impact of legislation on the cigar industry and consumers. (January 2007).
- *Toman v. Alliance Landfill Inc.* "Impacts of the Alliance Landfill on Property Values in Taylor, Old Forge and Moosic Boroughs," Expert Report Prepared for Alliance Landfill Inc. (January 2006).
- *Toman v. Alliance Landfill Inc.* "An Assessment of the Property Value Impacts of the Alliance Landfill Expansion Project," Expert Report prepared for Alliance Landfill Inc. (June 2005).
- "Rent Control in Morristown, New Jersey," Expert Report prepared for Wolf-Block for plaintiffs in opposition to the Township of Morristown (November 2004).
- *Rodriguez, et al. v. Ford Motor Credit Company* (No. 01 C 8526), "Analyzing the Disparate Impact Produced by Ford Motor Credit Company's Finance Charge Markup Policy," (May 2002).

### **Federal Reserve Publications**

- "Has Suburbanization Diminished the Importance of Access to Center City?" (2000) Business Review, May/June.
- Does the Tax Treatment of Housing Affect the Pattern of Metropolitan Development?" (1999) Business Review, March/April.
- "Does the Tax Treatment of Housing Create an Incentive for Exclusionary Zoning and Increased Decentralization?" Federal Reserve Bank of Philadelphia Working Paper #99-22.
- "Measuring Housing Services Inflation," (1998) Federal Reserve Bank of Philadelphia Working Paper # 99-9R, with Theodore Crone and Leonard Nakamura.
- "The Tax Treatment of Housing: Its Effects on Bounded and Unbounded Communities," Federal Reserve Bank of Philadelphia Working Paper # 98-23, with Joseph Gyourko.
- "Transportation Investments in the Philadelphia Metropolitan Area: Who Benefits? Who Pays? And





What Are the Consequences?" Federal Reserve Bank of Philadelphia Working Paper # 98-7.

- "The Downtown Parking Syndrome: Does Curing the Illness Kill the Patient?" (1998) Business Review, January/February.
- "Does the U.S. Tax Treatment of Housing Promote Suburbanization and Central City Decline," (1997) Federal Reserve Bank of Philadelphia Working Paper # 97-13.
- "The Suburban Housing Market: The Effects of City and Suburban Job Growth" (1996) Business Review, Federal Reserve Bank of Philadelphia, November/December.
- "Central City Decline: Regional or Neighborhood Solutions?" (1996), Business Review, Federal Reserve Bank of Philadelphia, March/April.
- "Public Transit: Realizing Its Potential," (1994) Business Review, Federal Reserve Bank of Philadelphia, September/October.
- "City and Suburban Growth: Substitutes or Compliments?" (1992) Business Review, Federal Reserve Bank of Philadelphia, September/October.
- "Is Access to Center City Still Valuable?" (1991) Business Review, Federal Reserve Bank of Philadelphia, July/August.
- "Property Taxes, Home Ownership Capitalization Rates, and Housing Consumption" (1991) Federal Reserve Bank of Philadelphia Working Paper, No. 91-13.
- "Consumer Choice With State-Dependent Uncertainty about Product Quality: Late Trains and Commuter Rail Ridership" (1989) Federal Reserve Bank of Philadelphia Working Paper No. 90-7.
- "Unequal Subsidies in Highway Investment: What Are the Consequences" (1989) Business Review, Philadelphia Federal Reserve Bank, November/December.
- "Concentration, Prices, and Output in the Automobile Industry" (1988) Federal Reserve Bank of Philadelphia Working Paper No. 88-6, with Peter Linneman.
- "Commuter Rail Ridership" (1987) Business Review, Federal Reserve Bank of Philadelphia, November/December.

### **Book Review**

- Dynamics of Office Markets: Empirical Findings and Research Issues, by John M. Clapp, 1993. American Real Estate and Urban Economics Association Monograph Series, No. 1: Washington: Urban Institute Press.

## EDUCATION

---

**University of Pennsylvania**, Philadelphia, PA

Ph.D. Economics, 1986

Dissertation Fellowship: Mellon Seminar on the Future of Cities, 1985.

M.S. Energy Management and Policy, 1980, School of Public and Urban Policy,  
NCAA Scholarship for Graduate Study.



**Haverford College**, Haverford, PA.

B.A. Economics, 1977

Scholar-Athlete of the Year, 1977,

First Team All-American Basketball, Division III, 1977.

