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2013]

THE EFFECTIVENESS AND ENVIRONMENTAL IMPACT OF
ECONOMIC DEVELOPMENT INCENTIVES AS
MEASURES TO RESPOND TO
ENVIRONMENTAL HARM

JAMES E. HOLLOWAY¹

I. INTRODUCTION

Economic development incentives encourage commercial and industrial development to further fiscal, economic and social objectives of local and state governments.² Nevertheless, some advocates and scholars raise public policy concerns as to whether state, county, and municipal economic development incentives can also harm environmental quality, prime farmland, and natural resources.³ Critics point out that state and local governments must be

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2. Sherry L. Jarrell et al., *Law and Economics of Regulating Local Economic Development Incentives*, 41 WAKE FOREST L. REV. 805, 806 (2006) (defining economic development incentives as “publicly sponsored or publicly funded projects or spending measures that seek to encourage local job creation, job retention, or capital investment”). Dan Gorin, *Economic Development Incentives: Research Approaches and Current Views*, FED. RES. BULL., (2007), <http://www.federalreserve.gov/pubs/bulletin/2008/articles/econdevelopment/default.htm>; Alan Peters & Peter Fisher, *The Failures of Economic Development Incentives*, 70 J. AM. PLAN. ASSN. 27, 27 (2004), available at <http://www.crcworks.org/cfsccecd/fisher.pdf>; Lingwen Zheng & Mildred Warner, *Business Incentive Use Among U.S. Local Governments: A Story of Accountability*, 24 ECON. DEV. Q. 325, 325-36 (2010), available at <http://edq.sagepub.com/content/24/4/325> (outlining how Zheng and Warner’s research “is based on surveys of local government economic development practice conducted by the International City/County Management Association (ICMA) in 1994, 1999, and 2004.”). “The sample size ranges from 700 to 1,000 cities and counties per survey. The sample is broadly representative by metro status and population size.” *Id.*

3. See Sarah Kogel-Smucker, Note, *Zoning Out: State Enterprise Zones’ Impact on Sprawl, Job Creation, and Environment*, 35 B.C. ENVTL. AFF. L. REV. 111, 119-21 (2008) (examining whether state enterprise zones cause harm to environmental quality, prime farmland, and soil and water resources); J. Spencer Clark, Note, *Rocking the Suburbs: Incentive Zoning as a Tool to Eliminate Sprawl*, 22 BYU J. PUB. L. 255, 257 (2007) (“focus[ing] . . . on incentive zoning in priority growth districts [and] . . . incentive zoning through the lens of New Urban communities and how these com-

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careful to balance the environmental impact of economic incentives against how effectively the incentives will further a community's economic and social objectives.⁴ Ascertaining the effectiveness of an economic incentive requires determining the incentive's ability to enhance quality of life, further community growth objectives, attract sustainable businesses, and promote feasible business projects.⁵ Regardless of their effectiveness, incentives causing environmental harm should be revised or repealed. When making the choice to implement an economic incentive, a community must examine the possible consequences of air and water pollution, prime farmland losses, and soil and water resource degradation.⁶ A reduction in these valuable natural resources may also reduce the quality of life for a community or established business.⁷ Thus, any public or private actions to revise or repeal eco-

munities can best accommodate incentive zoning through clustered development and density bonuses.”). Several scholars and commentators have examined the use and impact of using incentives to encourage or induce compliance with environmental regulations. See, e.g., Robert W. Hahn & Robert N. Stavins, *Incentive-Based Environmental Regulation: A New Era from an Old Idea?*, 18 *ECOLOGY L.Q.* 1, 8 (1991) (suggesting systems wherein “allowable overall level of pollution is established and then allotted in the form of permits among firms”); Stephen M. Johnson, *Economics v. Equity: Do Market-Based Environmental Reforms Exacerbate Environmental Injustice?*, 56 *WASH. & LEE L. REV.* 111, 113 (1999) (concluding “market-based approaches use economic incentives to encourage polluters to reduce their pollution in the most cost-effective manner”). *Contra* David M. Driesen, *Is Emissions Trading an Economic Incentive Program?: Replacing the Command and Control/Economic Incentive Dichotomy*, 55 *WASH. & LEE L. REV.* 289, 290 (1998) (concluding both traditional regulation and emissions trading can be considered economic incentive programs).

4. See James E. Holloway & Donald C. Guy, *Policy Coordination and the Takings Clause: The Coordination of Natural Resource Programs Imposing Multiple Burdens on Farmers and Landowners*, 8 *J. LAND USE & ENVTL. L.* 175, 220-32 (1992) [hereinafter *Policy Coordination*] (discussing impact of policy coordination); see James E. Holloway & Donald C. Guy, *A Limitation on Development Impact Exactions to Limit Social Policy-Making: Interpreting the Takings Clause to Limit Land Use Policy-Making for Social Welfare Goals of Urban Communities*, 9 *DICK. J. ENVTL. L. POL'Y* 1, 27-35 (2000) [hereinafter *A Limitation on Development Impact Exactions*] (analyzing impact exactions).

5. Gorin, *supra* note 2 (stating “studies suggest that incentives can be effective in certain situations, and also buttress the case for further research that makes use of the new data and investigative tools.”). *Contra* Peters & Fisher, *supra* note 2, at 27 (discussing how “after decades of policy experimentation and literally hundreds of scholarly studies, none of these claims is clearly substantiated. Indeed, as we have argued in this article, there is a good chance that all of these claims are false.”). Jarrell et al., *supra* note 2, at 809 (“explain[ing] the kinds of economic analyses that could and should affect legal and political decisions involving the creation and regulation of EDI[s] . . .”).

6. See *infra* notes 90-99 and accompanying text, and *infra* notes 118-154 and accompanying text (discussing EDIs and how they can impact environmental quality).

7. See *id.* (highlighting potential harm to natural resources when market changes occur).

conomic incentives in order to prevent environmental harm require a careful weighing of both the effectiveness of economic incentives and the nature of potential environmental harm.⁸

This Article encourages legislative policymakers to assess the effectiveness of economic incentives as well as the environmental impact when developing economic incentives.⁹ Part II explains the constitutional, economic, and regulatory concerns of economic incentives which encourage private markets to improve economic development.¹⁰ Part III then discusses the categories and effectiveness of economic incentives used to induce economic development.¹¹ Next, Part IV discusses characteristics of three economic development incentive programs created to induce private development and community growth.¹² Thereafter, Part V examines the potential and actual impact of three economic development incentives on agricultural land, natural resources, and environment quality.¹³ Part VI discusses what an economic development incentive program needs to balance the conflicting needs of businesses, the environment, and the public.¹⁴ Part VII outlines how economic development incentives serve a useful purpose and provide needed public benefits.¹⁵ Finally, Part VII explains how commercial and industrial economic development incentives should target businesses with the potential to balance competing economic and environmental interests.¹⁶

8. James E. Holloway & Donald C. Guy, *Smart Growth and Limits on Government Powers: Effecting Nature, Markets and the Quality of Life Under the Takings and Other Provisions*, 9 DICK. J. ENVTL. L. POL'Y 421, 430-31 (2001) [hereinafter *Smart Growth*] (discussing need to weigh economic effectiveness against environmental harms).

9. For further discussion regarding how policymakers can assess both the effectiveness and environmental impact of economic incentive programs, see *infra* notes 118-154 and accompanying text.

10. For discussion of the constitutional, economic, and regulatory concerns posed by economic incentive programs, see *infra* notes 16-49 and accompanying text.

11. For a description of the categories and effectiveness of economic incentives, see *infra* notes 53-76 and accompanying text.

12. For a discussion of the characteristics of economic incentive programs, see *infra* notes 77-117 and accompanying text.

13. For an examination of the consequences of three economic incentive programs, see *infra* notes 118-154 and accompanying text.

14. For an explanation of what economic incentive programs need to balance conflicting economic and environmental interests, see *infra* notes 118-154 and accompanying text.

15. For discussion of how economic incentive programs provide needed public benefits, see *infra* notes 50-76 and accompanying text.

16. For an analysis of how economic incentive programs should target specific businesses, see *infra* notes 77-117 and accompanying text.

II. NATURE AND VALIDITY OF ECONOMIC INCENTIVE REGULATION

State and local policymakers are often tasked with designing economic incentive programs that involve risky commercial and industrial developments. As a result, state and local policymakers should offer these economic incentives to businesses putting forth financially sound development projects.¹⁷ Economic incentives, however, must not harm environmental quality, degrade natural resources, or convert prime farmland.¹⁸ These projects often require state and local policymakers to decide whether the public benefits of economic development outweigh potential harm to the environment.¹⁹

A. Constitutional Validity of Economic Incentives

Tax and other economic incentives affect state corporations conducting business in interstate commerce.²⁰ These incentives can further economic development interests, but they may also interfere with interstate commerce.²¹ In *Daimler Chrysler v. Cuno*, the United States Supreme Court declined to determine whether a state tax incentive program violated the Dormant Commerce Clause.²² Consequently, the constitutionality of state tax incentive programs remains an open question under the Commerce Clause and complicates the regulation of economic incentive programs.²³

17. See generally, *The United States Experience with Economic Incentives for Protecting the Environment*, NAT'L CENTER FOR ENVTL. ECON., ix (Jan. 2001), available at [http://yosemite.epa.gov/ec/epa/cerm.nsf/vwAN/EE-0216B-13.pdf/\\$file/EE-0216B-13.pdf](http://yosemite.epa.gov/ec/epa/cerm.nsf/vwAN/EE-0216B-13.pdf/$file/EE-0216B-13.pdf) [hereinafter *United States Economic Incentives*] (explaining how businesses can be inventive and cut costs in creating programs to cut pollution).

18. See *Smart Growth*, *supra* note 7 at 423-25 (explaining economic incentive programs should not harm environmental quality).

19. See *id.* at 430-31 (discussing need for policymakers to weigh economic effectiveness against environmental harms).

20. See generally *United States Economic Incentives*, *supra* note 16 (listing various economic incentive programs aimed at businesses).

21. See Jarrell et al., *supra* note 2, at 811-17; Jonathan Edwards, Note, *Daimler Chrysler v. Cuno: The Supreme Court Hits the Brakes on Determining the Constitutionality of Investment Incentives Given by States to Corporate America*, 58 MERCER L. REV. 1411, 1413 (2007) (arguing incentives further economic development interests but interfere with interstate commerce).

22. Edwards, *supra* note 20, at 1411-12 (citing *Daimler Chrysler Corp. v. Cuno*, 547 U.S. 322, 322 (2006)); U.S. CONST. art. I, § 8, cl. 3.

23. Edwards, *supra* note 20, at 1411-12 (discussing incentive program constitutionality); Shane L. Parker, Note, *The Debate Over Kentucky's Tax Incentives: Do They Have A Future In The Commonwealth If State Courts Follow The Coercive Pre-Existing Tax Liability Test?*, 45 BRANDEIS L.J. 809, 811 (2007).

Economic incentives also present a variety of other legal and policy questions.²⁴ One such question is an economic incentive's level of effectiveness.²⁵ State policymakers must address the effectiveness of economic incentives to determine whether incentives further state and local economic development objectives, such as creating more jobs and increasing tax revenues.²⁶ Another hotly debated question is the environmental impact of state and local economic incentives.²⁷ Policymakers must decide whether economic incentives will cause harm or diminish environmental quality, natural resources, and prime farmland by increasing industrial and commercial development.²⁸

Responding to these difficult questions often requires coordination among businesses and communities to avoid undermining either economic or environmental policies.²⁹ When state and local policymakers find that economic incentives are ineffective in furthering economic development or cause environmental harm, policymakers must revise or repeal these failed incentive programs. If a statutorily enacted economic incentive is effective but causing environmental harm, it is often easier to address the environmental harm than to revise the statute. Although effectiveness and environmental harm are distinct questions, they require close coordination when economic incentives pose environmental dangers that may affect the quality of life in a community.³⁰

To address conflicting economic development and environmental interests, federal, state, and local policymakers must establish a balance among such interests.³¹ When policymakers authorize economic incentive programs they must assure such balance remains intact.³² In many situations, economic incentive pro-

24. See *Smart Growth*, *supra* note 7 at 435-43 (describing need for policymakers to determine economic development programs' effectiveness).

25. See *id.* (counseling policymakers to investigate economic incentive program consequences).

26. See *id.* (noting policymakers need to determine economic development programs' effectiveness).

27. See *id.* at 423-25 (explaining economic incentive programs should not harm environmental quality).

28. See *id.* (discussing whether economic incentive programs harmed environmental quality, natural resources and farmland).

29. See *Policy Coordination*, *supra* note 4 at 178-180 (discussing need for coordination among businesses and policymakers).

30. See *id.* (asserting business and policymakers must coordinate regarding incentive programs).

31. See *Smart Growth*, *supra* note 7 at 430-31 (discussing need for policymakers to weight different interests).

32. See *id.* (explaining policymakers must assure economic incentive programs achieve balance between economic and environmental interests).

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grams depend on the uncertainty and risk of private development in the free market and therefore there is no guarantee of achieving the desired public objectives.³³ Public officials must closely scrutinize the effectiveness of these types of economic incentive programs.³⁴ Policymakers need to be careful because often the public desire for economic and social growth does not justify long-term harm or damage to the environment.

B. Business of Economic Development Incentives

In determining the effectiveness of an economic incentive, the question is whether an economic incentive possesses the ability to support economic growth policies and objectives.³⁵ State and local policymakers must understand markets and finance in order to identify and evaluate economic development projects that will succeed in today's global economy.³⁶ Development projects are integral to determine the effectiveness of economic incentives and whether they will result in environmental harm.³⁷ Policymakers should weigh the effects of such projects on environmental quality, natural resources, and farmland, as well as their ability to achieve economic development objectives.³⁸ Businesses should also develop business plans that respond to changes in their business needs while also supporting public objectives.³⁹ Development projects should further economic development policies by starting new businesses and expanding existing businesses to increase taxes, jobs, and other benefits to the community. At the same time, the individuals who run these businesses must design projects that make a profit, in addition to providing local communities with tax and other benefits.⁴⁰

33. See Peters & Fisher, *supra* note 2, at 35 (recognizing economic development incentives can be ineffective).

34. *Id.* (arguing public officials must scrutinize programs).

35. See *Smart Growth*, *supra* note 7, at 435-43 (describing need for policymakers to determine economic development programs' effectiveness).

36. Gorin, *supra* note 2 (discussing interplay between market forces and incentive programs); see also Peters & Fisher, *supra* note 2, at 27-29.

37. See *Smart Growth*, *supra* note 7, at 430-31 (discussing need for policymakers to weigh different interests).

38. See generally *id.* 423-25 (explaining economic incentive programs should not harm environmental quality).

39. See generally *United States Economic Incentives*, *supra* note 16, at ix (explaining how businesses can adjust business plans to support public objectives).

40. See generally *id.* (explaining how businesses can be profitable through economic incentive programs).

C. Regulatory Nature of Economic Incentives

State and local economic development incentives consist of economic development programs, tax incentives, and other statutes and ordinances designed to further community economic growth.⁴¹ These programs and incentives fall under two types of government regulation: command-and-control and mixed command-and-control.⁴² The form of economic development regulation impacts the implementation of the program, as well as its ability to achieve desired public benefits.⁴³ The command-and-control scheme imposes enforceable obligations on individuals and business organizations to perform certain actions or practices that state and local governments deem necessary.⁴⁴ An example of a command-and-control scheme mandate is environmental regulation requiring parties “to install a particular pollution control device”⁴⁵ Under the mandate, a party is obligated to comply or suffer a penalty.⁴⁶ Regulatory and legislative mandates imposed by command-and-control schemes are frequently challenged as Constitutional violations.⁴⁷

The mixed command-and-control mandate requires voluntary participation and enforceable mandates that are more lenient than traditional command-and-control government mandates, which

41. See generally *id.* at iv-vii (listing various economic incentive programs aimed at businesses).

42. Amy Sinden, *The Tragedy Of The Commons And The Myth Of A Private Property Solution*, 78 U. COLO. L. REV. 533, 549 (2007) (explaining dichotomy between command-and-control regulation and economic incentive regulation and concluding too much regulation is not command-and-control regulation).

43. *Id.* (discussing how program form impacts implementation and success).

44. See Ralph Stuart & Tom Tietenberg, *Command and control regulation*, THE ENCYCLOPEDIA OF EARTH, http://www.eoearth.org/article/Command_and_control_regulation (last updated Mar. 25, 2013) (discussing command-and-control scheme in environmental regulation).

45. Sinden, *supra* note 41, at 549 (explaining command-and-control regulatory schemes).

46. See Stuart & Tietenberg, *supra* note 43 (discussing aspects of command-and-control schemes).

47. See James E. Holloway & Donald C. Guy, *Tahoe-Sierra Preservation Council, Inc.: A Shift or Compromise In the Direction of the Court On Protecting Economic and Property Rights*, 10 ALB. L. ENVTL. OUTLOOK J. 229, 231 (2005) [hereinafter *Protecting Economic and Property Rights*] (explaining how command-and-control schemes impose regulatory mandates which can be challenged as Constitutional violations); Nancie G. Marzulla, *The Property Rights Movement: How It Began and Where It Is Headed*, in A WOLF IN THE GARDEN: THE LAND RIGHTS MOVEMENT AND THE NEW ENVIRONMENTAL DEBATE 1, 5-7 (P.D. Brick and R. McGregor Crawley ed., 1996); Lawrence Blume et al., *The Taking of Land: When Should Compensation Be Paid?*, 100 Q.J. ECON. 71, 72-73 (1984); Robert Innes, *Takings, Compensation, and Equal Treatment for Owners of Developed and Undeveloped Property*, 15 J.L. & ECON. 403, 403 (1997).

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may restrict economic land development and business operations.⁴⁸ Mixed command-and-control regulations promote voluntary participation by providing tax benefits and subsidies to businesses that perform activities beneficial to a city, county, or state's economy or environment.⁴⁹ Most economic incentives are not command-and-control regulation, but are mixed command-and-control regulations requiring voluntary compliance with economic development policies.⁵⁰

III. USING ECONOMIC INCENTIVES TO PROVIDE FOR PUBLIC NEEDS

Economic incentives provide many benefits to municipal, county, and state governments. Economic incentives include tax and other financial incentives to spur economic development programs.⁵¹ Other incentives include relaxation of special land use and business development requirements.⁵² Local and state governments design these incentives to encourage manufacturers and other businesses to relocate, expand, or start new manufacturing facilities.⁵³

48. See Sinden, *supra* note 41, at 549 (discussing mixed command-and-control regulation).

49. See *id.* (explaining how economic incentive regulation requires voluntary participation).

50. See generally Adam Babich, *A New Era In Environmental Law*, 20 COLO. LAW. 435 (1991) (comparing and contrasting command-and-control regulation with economic development incentives). Economic incentives include pollution taxes or environmental trading markets. *Id.*

51. See Gorin, *supra* note 2; see *infra* Part IV C, STATE AND LOCAL DEVELOPMENT INCENTIVE TAX PROGRAMS, and accompanying notes (discussing tax, grant, and other financial incentives given by state and local governments). Zheng and Warner studied the use of business incentives by local governments and found that:

Although a large proportion of local governments still use business incentives, accountability and participation are also higher within this group. This suggests a process of policy learning regarding how to effectively use business incentives. However, we have also found a large set of local governments that do not use business incentives. Compared with incentive users, nonusers face fewer economic development barriers and lower competition but also lower economic growth.

Zheng & Warner, *supra* note 2, at 334. They also note that "the number of governments *not* using business incentives grew from 12% in 1994 to 45% in 2004. . . . Across all three models, accountability is the primary factor that distinguishes incentive users from nonusers. Governments that apply more accountability measures are less likely to be in the nonuser group." *Id.* at 332.

52. Clark, *supra* note 3, at 255; see also *infra* Part IV A, ENTERPRISE ZONES AND GROWTH STRATEGIES and Part IV B, PRIORITY GROWTH DISTRICTS AND INCENTIVES ZONING (discussing use manufacturing and land use incentives used to encourage economic development).

53. See generally *Economic Incentives*, NAT'L CENTER FOR ENVTL. ECON., U.S. Environmental Protection Agency, <http://yosemite.epa.gov/ee/epa/eed.nsf/pages/>

A. Categories and Nature of Economic Incentives

Economic incentives include various fiscal, administrative, and other programs to induce and encourage commercial, industrial, and other development.⁵⁴ The various classes of economic incentive programs further economic development, as well as tax, social, and fiscal policies.⁵⁵ Dan Gorin, a Supervisory Policy Analyst with the Federal Reserve System, states that the categories of economic incentives include the following:

1. [O]ne-time deals negotiated with individual firms,
2. [G]rants and loans provided under programs that receive annual state appropriations,
3. [P]rograms establishing parameters and limits, but allowing some degree of local government discretion;
4. [I]ncentives that function as entitlements, whereby a firm receives the benefit automatically provided its investment is in an eligible sector and the size of the investment or number of new jobs created exceeds some threshold, and
5. [C]ode features that apply to all firms, but benefit some more than others and are often advertised by economic development agencies as reasons to locate in a state.⁵⁶

Economic incentives also include amendments to state statutes opening markets to particular industries, such as corporate farming.⁵⁷ Such broad categories of economic incentives further fiscal, tax, and economic policies in order to encourage development.

EconomicIncentives.html (last updated Apr. 15, 2013) (discussing economic incentive programs aimed at creating manufacturing work).

54. *See generally id.* (explaining how economic incentive programs are designed to encourage commercial and industrial development).

55. *See generally id.* (describing how economic incentive programs can further economic development, tax, social and fiscal policies).

56. Gorin, *supra* note 2 (citing Peter S. Fisher & Alan H. Peters, *Tax and Spending Incentives and Enterprise Zones*, New Eng. Econ. Rev. 109-130 (1997), available at www.bos.frb.org/economic/neer/neer1997/neer297f.pdf).

57. Gorin, *supra* note 2 (discussing how states amend statutes to create economic incentives). Delaware and South Dakota, for example, relaxed their usury limits in an effort to induce large banks to locate their credit card operations within state borders — an effort that proved successful, as evidenced by the cluster of large banks with high credit card volumes located in Delaware and the South Dakota return address on many credit card statements. For more information, see Diane Ellis, *The Effect of Consumer Interest Rate Deregulation on Credit Card Volumes, Charge-Offs, and the Personal Bankruptcy Rate*, FDIC BANK TRENDS, www.fdic.gov/bank/analytical/bank/bt_9805.html (last updated May 5, 1998).

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B. Effectiveness of Incentives to Advance Economic Benefits

Policymakers must not overlook the effectiveness of economic incentives, such as tax and tax related incentives, to further economic development objectives.⁵⁸ Commentators still find it difficult to draw valid conclusions about the effectiveness of development incentives.⁵⁹ One commentator noted that although state and local incentives may have the same value, researchers are making effectiveness determinations using different definitions and incomplete data, and so may reach different conclusions.⁶⁰ The effectiveness of economic incentives is a major concern when addressing the environmental impacts of a program with both economic incentives and environmental harms.⁶¹

This Article sets forth a framework for determining whether economic incentives causing environmental harm are truly furthering economic and social objectives.⁶² This framework also ascertains whether the potential environmental harm is justifiable and proportionate to the economic benefits that flow from effective economic incentives.⁶³ This approach focuses on three elements: increased community growth, net gains to community, and cost of incentives to government.⁶⁴ This framework also focuses on the effectiveness of tax abatements, tax increment financing, sales tax exemptions, and corporate income tax exemptions in creating

58. See *Smart Growth*, *supra* note 7 at 423-25 (explaining need to weigh effectiveness of economic incentive programs).

59. Gorin, *supra* note 2 (noting difficulty of definitely determining economic incentives' effectiveness).

60. *Id.* (discussing how researchers use different definitions and data to determine effectiveness, and so may reach different conclusions).

61. See *Smart Growth*, *supra* note 7, at 423-25 (explaining need for policymakers to balance economic incentives and environmental harms).

62. For the proposed framework for evaluating economic development incentives, see *infra* notes 155-170 and accompanying text.

63. For further discussion of how this framework evaluates potential environmental harm and economic benefits, see *infra* notes 118-154 and accompanying text.

64. Fisher & Peters, *supra* note 2, at 27 (raising key issues regarding economic incentive effectiveness). Zheng and Warner listed measures that local governments identified to determine effectiveness. Zheng & Warner, *supra* note 2, at 330. These measures, listed in Table 2, are as follows:

investment or jobs.⁶⁵ Finally, this framework also assesses nontax incentives that include business grants, loans, and loan guarantees.⁶⁶ When evaluating the effectiveness of economic incentive programs, the framework must also determine whether there is an added financial cost of harm to environmental quality, natural resources, and farmland.⁶⁷

Although it appears that local incentives are more effective than state incentives, local policymakers should not yet rejoice. It may be that state incentives simply cause shifts in commerce and population within states causing persons to move from one locality to another.⁶⁸ Lingwen Zheng and Dr. Mildred Warner, of Cornell University's Department of City and Regional Planning, reported measures of business incentive effectiveness to study local governments' use of business incentives.⁶⁹ These measures included the number of jobs created by the new business, the amount of money invested in construction materials and labor, the amount of new

TABLE 1. Components of Key Variables (Percentage of governments reporting)

	1994	1999	2004
Business incentive effectiveness measures	—	—	44.90
Number of jobs created by the new business	63.96	55.85	40.50
Amount of money invested in construction materials and labor	31.04	28.60	28.24
New dollars invested in land	18.33	17.18	21.63
Company revenue/sales	18.44	13.05	14.19
Cost/benefit analysis	25.00	24.57	20.39
Others	9.27	10.65	4.82
Number of new businesses relocating or expanding in jurisdiction	—	32.34	21.07

Zheng & Warner, *supra* note 2, at 330 (deriving source of data from authors' analysis of ICMA Economic Development Survey data for 1994, 1999, and 2004).

65. Fisher & Peters, *supra* note 2, at 28. The incentives are not in decline despite the slowdown of the economy. See Tracey Hyatt Bosman & Noah Shlaes, *The Future of Economic Incentives*, AREA DEV. SITE AND FACILITY PLAN., <http://www.areadevelopment.com/taxesincentives/feb09/incentives-negotiation-statebudgets-closingfunds001.shtml?Page=1> (last visited Apr. 15, 2013) (explaining "officials are more intent than ever to retain existing/remaining jobs and to promote emerging areas where they have made significant investments . . .").

66. Fisher & Peters, *supra* note 2, at 28 (explaining framework for analyzing economic incentives).

67. See *Smart Growth*, *supra* note 7, at 423-25 (explaining economic incentive programs should not harm environmental quality).

68. Peters & Fisher, *supra* note 1, at 35 (discussing intrastate economic shifts resulting from incentive programs).

69. Zheng & Warner, *supra* note 1, at 330 (noting measures to determine incentive effectiveness).

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dollars invested in land, company revenue/sales, a cost/benefit analysis, and the number of new businesses relocating or expanding in jurisdiction.⁷⁰ Alan Peters and Peter Fisher, from the University of Iowa's Graduate Program in Urban and Regional Planning, concluded that "[t]he cities that use incentives may benefit fiscally from begging their neighbors, but states will often end up paying the costs."⁷¹ Peters and Fisher also concluded that traditional economic incentives put state and local governments on a cyclical path to tax cuts and subsidies.⁷² According to Peters and Fisher, this path drains local and state governments of funds needed to continue other programs and creates regressive local and state tax systems.⁷³ The effectiveness of state and local incentives remains an open question, which must be addressed to appropriately respond to environmental harm.

C. Effectiveness of Community Development Policies Relying on Incentives

Whether economic development incentives effectively improve economic growth and increase revenues is not well settled. Researchers, scholars, and commentators have found that economic development incentives are a mixed bag and require more research to determine their effectiveness.⁷⁴ Much of the research conducted to determine the effectiveness of economic incentives is inconclusive and unsatisfactory because researchers have not used appropriate methodology and data.⁷⁵ Although much of the methodology and data flaws have been corrected, disagreement amongst commentators, local officials, and state policymakers regarding the effective of incentives has yet to subside.⁷⁶ For instance, while some recent studies have shown that economic incentives can be effective with improving local economic growth, other studies conclude incentive effectiveness has neither been clearly established nor sub-

70. *Id.* (listing measures of effective business incentives).

71. Peters & Fisher, *supra* note 2, at 35 (analyzing population shifts resulting from incentive programs).

72. *Id.* at 35-36 (examining incentive program consequences).

73. *Id.* (finding incentive programs may have negative consequences). The effectiveness of economic incentives remains a mixed question, with some scholars finding them generally ineffective while others find them effective in some circumstances. See Chad Cotti & Mark Skidmore, *The Impact of State Government Subsidies and Tax Credits in an Emerging Industry: Ethanol Production 1980-2007*, 76 S. Econ. J. 1076, 1078-79 (Apr. 2010) (debating economic incentive program effectiveness).

74. Gorin, *supra* note 2 (noting economic incentive effectiveness remains undetermined).

75. *Id.* (describing difficulty of finding accurate economic incentive data).

76. *Id.* (describing ongoing debate about economic incentive programs).

stantiated.⁷⁷ In light of these recent studies, one could argue that legislative policymakers may be creating economic incentives that, if ineffective, pose harm to the environment without presenting any countervailing economic benefit.

IV. INCENTIVIZING THE DEVELOPMENT OF PRIVATE MARKETS

Economic incentives are regulatory means that state and local policymakers use to urge private markets to support state and local economic development.⁷⁸ Economic incentives gained increased attention when states began bidding wars to encourage the location and relocation of manufacturers.⁷⁹ To further municipal and county growth plans, states, counties, and municipalities have relied on economic incentives.⁸⁰ These economic incentives encouraged residential, commercial, and industrial development.⁸¹ Additionally, the federal government also uses tax incentives to further state, county, and municipal economic development.⁸²

A. Enterprise Zones and Growth Strategies

One economic development incentive includes regional economic development policies and programs. Specific geographical areas within a state are designated as enterprise zones.⁸³ State enterprise zone programs are widely used to promote economic devel-

77. *Compare id.* (suggesting economic incentives can potentially boost local economic growth), *with* Peters & Fisher, *supra* note 1, at 35 (noting economic incentives may provide communities with few practical benefits, if any). Sherry L. Jarrell and others:

[S]ketch the broad legal frameworks that could affect the regulation of [economic development incentives (EDI)], . . . explain[] the kinds of economic analyses that could and should affect legal and political decisions involving the creation and regulation of EDI, construct a performance benchmark that essentially permits history to be re-run as if the EDI had not been adopted, and use [this benchmark] to explore the impact of EDI on state or local performance. Jarrell et al., *supra* note 1, at 809.

78. Jarrell et al., *supra* note 1, at 806 (attempting to define economic incentives).

79. *Id.*; *see infra* Part IV C, STATE AND LOCAL DEVELOPMENT INCENTIVE TAX PROGRAMS, and accompanying text (explaining utilization of state and local business incentives to attract manufacturing facilities).

80. *See* Gorin, *supra* note 2 (discussing state and local reliance on economic incentive programs for economic growth).

81. *See id.* (explaining economic incentives encourage residential, commercial and industrial development).

82. Kogel-Smucker, *supra* note 3, at 119-21 (examining enterprise zones and their impact on municipal land use and environmental quality); Omnibus Budget Reconciliation Act of 1993, Subchapter C Empowerment Zones, Enterprise Communities, Rural Investment Areas etc., Pub. L. No. 103-66, 107 Stat. 543 (providing for federal empowerment zones and enterprise communities).

83. Kogel-Smucker, *supra* note 3, at 112 (explaining enterprise zones).

opment.⁸⁴ To encourage qualified businesses to locate within the enterprise zone, federal and state governments provide businesses with tax incentives.⁸⁵ Businesses that are jointly certified by local administrators and state officials “are eligible to receive additional incentives, including an investment tax credit against corporate franchise tax and personal income tax, a wage tax credit, and a real property tax credit.”⁸⁶ Thus, “certified businesses that create jobs can operate on an almost ‘tax-free’ basis for up to ten years.”⁸⁷ State enterprise zone programs “can be evaluated on their own terms, by examining if the programs meet their stated goals of economic development, firm attraction and retention, and job creation.”⁸⁸ Thus, successful enterprise zone programs provide jobs and other economic growth in return for tax incentives and other credits.

Enterprise zones raise questions regarding how effective they are at improving regional and local economic growth. Some scholars and commentators have concluded enterprise zone programs are not an effective way to improve economic growth.⁸⁹ Additionally, several studies of enterprise zones have concluded enterprise zone programs are minimally effective at advancing economic development objectives and goals.⁹⁰ Thus, enterprise zones pose the

84. *Id.* at 111-12 (describing purpose of state enterprise zone programs).

85. *Id.* at 112 (explaining governments provide tax incentives to businesses in order to encourage relocation to enterprise zones).

86. *Id.* at 119 (describing tax incentives derived from state and local agency certification).

87. Kogel-Smucker, *supra* note 3, at 119 (discussing how tax benefits behoove businesses).

88. *Id.* at 127 (noting benchmarks for economic incentive evaluation).

89. *Id.* at 129 (noting skeptical views regarding economic incentive programs).

90. *Id.* at 129-30 (identifying several studies conducted between 1996 and 2000 that found enterprise zones were not effective). Kogel-Smucker states that a 1996 study of New Jersey’s enterprise zone program “found no evidence that the New Jersey enterprise zone program resulted in increased economic activity.” A 1998 study examining the impact of state enterprise zone programs on business and housing market outcomes in six states found that, overall, zones have minimal impact on business growth. While zones did create new business activity, the total number of businesses in the zone actually decreased. Similarly, a 1999 study found that, on average, enterprise zones had little impact on housing markets, which the study asserted as an indicator of zone success. A 2000 study found that the total amount of financial benefits the zones provided was not a meaningful factor for predicting growth. Likewise, the different types of benefits the zones provided were not meaningful factors. Kogel-Smucker, *supra* note 3, at 129. At least one commentator has concluded enterprise zone programs were effective to repay the tax revenues invested in the enterprise zone. Kogel-Smucker notes that “a 2003 report on California’s state enterprise zone program concluded that the taxes collected from jobs generated by state enterprise zones ‘returned to the state treasury

same concerns as other business incentives regarding their effectiveness to create jobs and other economic benefits.

B. Priority Growth Districts and Incentive Zoning

To further community social and economic objectives, some governments provide zoning incentives in priority growth districts.⁹¹ “Incentive [z]oning is a development in land use regulation that encourages the creation of certain amenities and land use designs that a community wishes to promote.”⁹² Some communities use these zoning incentives to address urban sprawl, which causes “environmental degradation through loss of wetlands and sensitive lands and air and water quality degradation . . . and agricultural land loss.”⁹³ One commentator defined urban sprawl as “‘low-density development on the edges of cities and towns that is poorly planned, land-consumptive, automobile-dependent [and] designed without regard to its surroundings.’”⁹⁴ To combat urban sprawl and its consequences, urban counties and municipalities have established smart growth policies.⁹⁵ These policies control the

enough new taxes to pay for the program costs.” *Id.* at 130 (internal citation omitted).

91. Clark, *supra* note 3 at 264 (noting interaction between social objectives and incentives).

92. *Id.* (quoting Michael Murphy & Joseph Stinson, *Incentive Zoning (1996) in Pace University School of Law Land Use Law Center, L.U.C.A.S., available at <http://www.law.pace.edu/landuse/incen.html>* (last visited Apr. 24, 2007)) (providing background on incentive zoning programs).

93. Clark, *supra* note 2, at 256 (noting how urban sprawl harms environmental quality). For a definition of urban sprawl and its impact on communities, see *infra* Part V B, ENVIRONMENTAL IMPACT OF ENTERPRISE ZONES, and accompanying text.

94. Kogel-Smucker, *supra* note 3, at 120 (citing definition of urban sprawl by Mr. Richard Moe, President of National Trust for Historic Preservation).

95. Clark, *supra* note 2, at 256 (noting policies enacted to restrict urban sprawl). Cities have enacted smart growth programs that include priority growth districts and other land use and growth strategy policies. *Id.* at 266-77; see Robert H. Freilich, *Smart Growth in Western Metro Areas*, 43 NAT. RESOURCES J. 687, 692-97 (2003) (identifying impact fees, cluster zoning, mitigation fee, and other smart growth tools). Several states have enacted smart growth policies to permit and encourage communities to develop smart growth programs. Colorado, COLO. REV. STAT. ANN. § 24-32-3201 (West 2006); Connecticut, CONN. GEN. STAT. ANN. § 22a-103 (West 2007); Delaware, DEL. CODE ANN. tit. 7, § 7508 (2006); Florida, FLA. STAT. ANN. § 420.615 (West 2006); Illinois, 65 ILL. COMP. STAT. ANN. 5/11-13-1 (West 2005); Kentucky, KY. REV. STAT. ANN. § 198A.720 (West 2006); Maine, ME. REV. STAT. ANN. tit. 30-A, § 5283 (2006); Maryland, MD. CODE ANN., 66B § 12.01 (2006); Massachusetts, MASS. GEN. LAWS ANN. ch. 40R, § 13 (West 2004); Minnesota, MINN. STAT. ANN. § 473.255 (West 2006); Nevada, NEV. REV. STAT. ANN. § 278.250 (West 2006) (amended 2007); New Hampshire, N.H. REV. STAT. ANN. § 674:21 (2006); New Jersey, N.J. STAT. ANN. § 40:55D-65 (West 2004); Oregon, OR. REV. STAT. ANN. § 197.296 (West 2005); Rhode Island, R.I. GEN. LAWS § 42-128-8.1 (2006); Texas, TEX. LOC. GOV'T CODE ANN. § 373A.054 (West 2006); Utah,

location and design of various economic development projects that are of interest to local residents.⁹⁶ To carry out these policies, local communities first identify locations for economic development projects that will attract developers.⁹⁷ The best locations within priority growth districts are suburban and ex-urban areas that still possess rural qualities.⁹⁸ Then, to manage growth and avoid urban sprawl, the municipality determines whether any public transportation or other infrastructure is needed.⁹⁹ Priority growth areas are treated as economic incentives because municipalities control amenities, infrastructures, and other qualities that encourage economic development therein.¹⁰⁰

Priority growth areas protect natural resources and environmental quality because they prevent the shift of growth from urban to rural areas.¹⁰¹ In 2005, Jeremy Stone, a Researcher and Editor for the Land Use Law Center at Pace University School of Law, suggested that “[b]y combining [priority growth districts] with incentive zoning . . . allowable densities can be reduced in other parts of the community and open space preserved.”¹⁰² To preserve open space, developers are often given a “density bonus” and are allowed to develop property more extensively to preserve open space.¹⁰³ For example, New York legislation defines “incentives or bonuses” as “adjustments to the permissible population density, area, height, open space, use, or other provisions of a zoning ordinance or local law for a specific purpose authorized by the town board.”¹⁰⁴ More-

UTAH CODE ANN. § 63-38f-1704 (West 2006); Virginia, VA. CODE ANN. § 15.2-2201 (West 2006); Washington, WASH. REV. CODE ANN. § 36.70A.540 (West 2007); West Virginia, W. Va. Code Ann. § 8A-3-1 (West 2007).

96. Clark, *supra* note 3, at 257 (quoting Jeremy Stone regarding controlling location and design of economic development projects). States that contain cities and towns adopting and implementing priority growth districts include “New York, Maryland, South Carolina, Florida, Alabama, California, Colorado, Georgia, Louisiana, Massachusetts, Michigan, New Jersey, New Mexico, North Carolina, Oregon, Tennessee, Texas, Virginia, and Washington.” *Id.* at 262-63.

97. *Id.* (noting community’s active role in location selection).

98. *Id.* at 260 (describing unique qualities of suburban and ex-urban areas).

99. *Id.* at 257 (explaining importance of transportation and infrastructure planning to avoiding urban sprawl).

100. *Id.* at 264 (discussing how incentive zoning encourages creating certain amenities).

101. Clark, *supra* note 3, at 261 (acknowledging role of priority growth areas).

102. Jeremy Stone et al., *Breaking Ground: Planning and Building in Priority Growth Districts*, YALE SCH. OF FORESTRY & ENVTL. STUD. 3 (2005), available at <http://environment.research.yale.edu/documents/downloads/o-u/PriorityGrowthDistricts.pdf> (suggesting open space preservation method).

103. *Id.* at 264 (explaining tradeoff between cities and developers).

104. N.Y. Town Law § 261-b(1)(a) (McKinney 2007) (defining incentives or bonuses in New York).

over, New York's priority growth districts that implement a smart growth model and incentive zoning must establish environmental quality standards and address environmental impacts.¹⁰⁵ To move forward with incentive zoning, municipalities must find the incentives will not cause environmental harm and will remain consistent with other development.¹⁰⁶ To adequately preserve the environment, state and local land use law must continue to require those municipalities that are considering priority growth areas and incentive zoning to ascertain the environmental impact of those incentives.

C. State and Local Development of Incentive Tax Programs

Many states, counties, and municipalities have used tax incentives to encourage economic development by major corporations. These tax incentive schemes are used "to encourage local job creation, job retention, or capital investment."¹⁰⁷ For example, in 2003, Dell informed North Carolina officials that it needed a new East Coast assembly plant and requested both tax incentives and land.¹⁰⁸ In response, North Carolina extended to Dell an incentive offer that was worth more than \$242 million, comprised of \$225 million in corporate tax credits and nearly \$18 million in grant funding.¹⁰⁹ Dell indeed chose to locate to North Carolina, and subsequently gained another \$10,756 in annual incentives for each \$28,000-per-year job it created.¹¹⁰

In addition to receiving tax benefits and advantages from the state, Dell received economic incentives from a local county.¹¹¹ Three counties, Davidson, Forsyth, and Guilford, all offered com-

105. N.Y. Town Law § 261-b(3)(c) (McKinney 2007) (stating requirements for New York's incentive zoning).

106. *Id.* (discussing New York's incentive zoning requirements); *see also*, Clark, *supra* note 3, at 262 (highlighting importance of avoiding environmental harm in incentive zoning).

107. Jarrell et al., *supra* note 2, at 806 (describing uses of tax incentive schemes).

108. *Id.* at 807 (illustrating interplay between corporations and governments with respect to tax incentives).

109. *Id.* (breaking down North Carolina's incentive offer). The incentives package also included an exemption from state-mandated wage rates which allowed Dell to reduce the average annual pay from \$31,000 to \$28,000, and an agreement that Dell would be required to pay only 50% of the cost of health insurance for its employees. *Id.*

110. *Id.* at 808 (illustrating great lengths to which states go to attract businesses).

111. *Id.* (discussing county incentive packages).

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peting incentive packages to Dell.¹¹² Forsyth, where Dell ultimately located, made the best offer for land, cash, and infrastructure, a package worth \$37 million.¹¹³ The Forsyth package exceeded the Guilford County and the City of Greensboro packages worth \$15.6 million, High Point's \$8.8 million land and incentive proposal, and Davidson County's \$23.1 million cash and land package.¹¹⁴

Moreover, states also frequently offer lucrative incentive packages to automobile manufacturers that are looking to establish new facilities.¹¹⁵ For example, in 1980, Nissan received an incentive package estimated at \$33 million, which amounted to \$8,000 per anticipated job, for establishing a new facility in Tennessee.¹¹⁶ Subsequently, incentive packages handed out to Mazda, Saturn, DiamondStar, and Toyota, among others, continued to increase, and by 1987 Toyota received an estimated \$150 million, or \$50,000 per anticipated job, for building a new facility in Kentucky.¹¹⁷ In 1992, BMW was given an economic incentive package of \$150 million to build a facility in South Carolina, and Mercedes-Benz was given \$258 million to locate a manufacturing facility in Alabama.¹¹⁸ Such state and local tax, cash, and land incentives further economic growth and development by encouraging industrial, commercial, and other development to provide tax revenues and support community growth.

V. THE IMPACT OF DEVELOPMENT INCENTIVES ON NATURAL RESOURCES AND THE ENVIRONMENT

Different kinds of regulatory and tax incentives may have different environmental impacts on environmental quality, agricultural land, and natural resources. Development incentives can cause degradation of non-renewable soil and water resources, reduction of air and water qualities, and loss of agricultural land. Municipalities are well aware of the environmental impact of business

112. Jarrell et al., *supra* note 1, at 808 (noting incentive packages at more local levels as well).

113. *Id.* (describing competing counties' packages).

114. *Id.* (comparing county incentive packages).

115. Gorin, *supra* note 2 (elaborating on how location shopping is lucrative for businesses).

116. *Id.* (discussing Tennessee's incentive package for Nissan).

117. *Id.* (citing Jeffrey A. Finkle, *Location Incentives Are Unfair and Poorly Justified*, NATIONAL COUNCIL FOR URBAN ECONOMIC DEVELOPMENT, www.developmentalliance.com/docu/pdf/43300.pdf (last visited Feb. 28, 2013)).

118. *Id.* (exemplifying rise in incentive packages utilization).

incentives; they have listed environmental regulations and other related factors as barriers to using business incentives.¹¹⁹

A. Environmental Impact of Tax Incentives

To further economic growth objectives, state and local governments want to spur commercial, institutional, and industrial development. Tax incentives cause industrial developers to expand or build new manufacturing or service facilities that, in turn, cause real estate developers to build more residential and commercial developments, such as housing subdivisions and shopping malls.¹²⁰ Building and expanding facilities, houses, and malls increases the use of the non-renewable soil resources, and increase surface runoff, both of which affect environmental quality and water resources.¹²¹

Industrial development can spur residential, commercial and institutional development by expanding existing communities and increasing demand for houses, retail shops, and medical services. Communities must plan and control development that responds to an increase in manufacturing and other facilities. For example, industrial, residential, commercial, and institutional development can increase automobile, truck, and other vehicular traffic.¹²² Increases in vehicular traffic can increase air pollution and create noise pollution.¹²³ Increasing vehicular traffic also generates the need for

119. See Zheng & Warner, *supra* note 2, at 329 (discussing how municipalities are cautious about business incentives due to risk of environmental harm). Zheng and Warner studied the use of business incentives by local governments and listed barriers identified by local managers and administrators. *Id.* Their results are as follows:

TABLE 2. Components of Key Variables (Percentage of governments reporting)

Selected Economic development barriers	1994	1999	2004
Citizen opposition	32.60	30.42	16.94
Availability of land	44.38	54.80	44.63
Cost of land	39.06	39.64	41.05
Environmental regulations	—	—	17.08
Poor quality of life	—	—	3.99

Id. (reflecting data from authors' analysis of ICMA Economic Development Survey data for 1994, 1999, and 2004).

120. Jarrell et al., *supra* note 2, at 807 (explaining Dell wanted approximately 150 acres of industrial land for its manufacturing facility).

121. Kogel-Smucker, *supra* note 3, at 124 (discussing sprawl development's impact on environment).

122. See *id.* at 120-21 (discussing how development increases traffic).

123. *Id.* (highlighting risk of pollution).

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more highways, streets, and parking spaces.¹²⁴ These impervious surface areas of thoroughfares and parking spaces increase the speed and amount of surface water runoff and non-point source pollution.¹²⁵ Such runoff and pollution are likely to cause a gradual decline in water quality of lakes, streams, and rivers.¹²⁶ Notwithstanding federal, state, and local environmental standards, the impact of industrial development on water quality and resources can harm the environment and threatens to degrade the quality of life that existed prior to such development.

Industrial development can also convert prime farmland to non-farm uses and purposes. Prime farmland, which is the most productive land, is often equally well-suited for nonfarm purposes such as residential, commercial, and institutional development.¹²⁷ Moreover, drainage, structure, and other qualities of prime farmland are very suitable and less costly for industrial development.¹²⁸ Converting prime farmland to non-farming uses can, however, permanently remove the most productive farmland from production and threaten long-term food supplies.¹²⁹ Development permanently removes farmland from crop and grass production when landscaping substantially disturbs the soil and alters surface qualities, such as removing topsoil, which causes slow subsurface drainage.¹³⁰ Thus, the community may gain manufacturing productivity, but at the cost of losing farmland, farm productivity, and open space.

B. Environmental Impact of Enterprise Zones

Enterprise zones demonstrate how economic incentives that provide economic growth can destroy environmental quality. Specifically, environmental advocates have found connections between enterprise zones and environmental harm because enterprise zones

124. *Id.* (describing transportation infrastructure which contributes to pollution).

125. *Id.* at 124 (highlighting conditions for increased surface water).

126. Kogel-Smucker, *supra* note 3, at 124 (discussing effect of runoff on water quality).

127. *A Limitation on Development Impact Exactions*, *supra* note 4, at 379-90 (discussing examples of damaging effect of water runoff).

128. *Id.* (finding prime farmland creates conditions for less costly development).

129. See Kogel-Smucker, *supra* note 2, at 133 (finding loss of large amounts of farmland due to urban development in New York).

130. *Id.* (noting sprawl can permanently destroy farmland and ultimately provide no economic benefit). Zheng and Warner found two major barriers to business incentives were availability of land and costs of land. Zheng & Warner, *supra* note 1, at 329.

can cause urban sprawl, especially when they are located immediately outside of a city.¹³¹ Urban sprawl that occurs on the edge of cities can destroy natural resources and reduce environmental quality.¹³²

Enterprise zone programs increase urban sprawl in two ways.¹³³ First, states may fail to coordinate transportation and planning, resulting in enterprise zones inaccessible by public transportation.¹³⁴ Second, enterprise zones can lead to business relocation by incentivizing older businesses to relocate from old communities to new communities within a state.¹³⁵ This causes a larger amount of land to be used, often inefficiently, than is justified by economic growth.¹³⁶ To illustrate, a study of enterprise zones in Ohio found that only 323 of 6,523 newly created jobs were attributable to interstate moves or relocations.¹³⁷ In 2003, a New York study found that upstate New York experienced an increase of urban acreage by 30%, which resulted in a conversion of approximately 425,000 acres of agricultural land, but the population in that area only increased by 2.6%.¹³⁸ Both of these studies provide examples of how enterprise zones shift populations and result in a loss of agricultural and forest land, as well as an eventual loss of farms.

Sprawl can have severe negative impacts on the environment; it can destroy natural areas, reduce open space, and increase water and air pollution.¹³⁹ Between 1992 and 1997, the United States de-

131. See Greg LeRoy, *Subsidizing Sprawl: How Economic Development Programs Are Going Awry*, MULTINATIONAL MONITOR, Oct. 2003, at 9, 12, available at <http://www.multinationalmonitor.org/mm2003/102003/leroy.html>; see also James M. McElfish, Jr., *Taxation Effects on Land Development and Conservation*, 22 TEMP. ENVTL. L. & TECH. J. 139, 144 (2004) (discussing how enterprise zones can cause urban sprawl).

132. Kogel-Smucker, *supra* note 3, at 125 (discussing urban sprawl's environmental impact).

133. *Id.* at 123 (highlighting two ways in which urban sprawl impacts environment).

134. *Id.* (explaining how urban sprawl is exacerbated by increased automobile use).

135. *Id.* at 132-33 (stating effects of business relocations result from tax incentive packages).

136. Timothy J. Dowling, *Reflections on Urban Sprawl, Smart Growth, and the Fifth Amendment*, 148 U. PA. L. REV. 873, 875 (2000) (highlighting that development resulting from economic incentives often exceeds population growth).

137. Kogel-Smucker, *supra* note 3, at 133 (demonstrating low economic effectiveness of in-state business relocations).

138. *Id.* (illustrating ineffectiveness of New York's empire zone program in increasing jobs in proportion to land use).

139. Reid Ewing et al., *Measuring Sprawl and Its Impact*, SMART GROWTH AMERICA, 17, 21 (2002), available at <http://landuselaw.wustl.edu/Articles/measuringsprawl.pdf> (stating that "the degree to which a region sprawls [is] the best indi-

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veloped sixteen million acres, while only one million acres of farmland are developed in the United States annually.¹⁴⁰ In addition, sprawl increases the use of automobiles, which results in more emissions of air and water pollutions.¹⁴¹ Annually, transportation contributes “approximately thirty-two percent, or 450 million metric tons, of the United States’ total of carbon dioxide emissions into the atmosphere.”¹⁴² In addition, urban sprawl threatens water quality because urban sprawl often results in the construction of parking lots, driveways, and other impervious areas, which increases storm water runoff.¹⁴³ This water runoff flows over these surfaces at an increased volume and speed, causing flooding of creeks, erosion of stream banks, and more non-point source pollution.¹⁴⁴ Moreover, sprawl threatens wildlife through habitat loss, habitat fragmentation, and pollution in wildlife habitats.¹⁴⁵ Environmentalists want states to promote smart growth in order to prevent or minimize urban sprawl, but states are hesitant to implement such smart growth because it is often viewed as trying to force communities to choose between jobs and the environment.¹⁴⁶

Development advocates, on the other hand, contend that sprawl has limited environmental impact.¹⁴⁷ They argue that increased production of real estate and business facilities offsets the loss of farmland and that no real link exists between sprawl and vehicle usage.¹⁴⁸ Despite the arguments advanced by development advocates, enterprise zones that cause urban sprawl are a threat to environmental quality, natural resources, and prime farmland. Pro-

cator of a metro area’s ozone levels,” as “[o]zone levels between the most sprawling and least sprawling areas can differ by 41 parts per billion”).

140. See *Our Built and Natural Environments*, EPA 4 (Jan. 2001), available at <http://www.epa.gov/smartgrowth/pdf/built.pdf> (reporting statistics of land development in United States).

141. See GREG LEROY, *THE GREAT AMERICAN JOBS SCAM*, 130 (Berrett Koehler 1st 2005) (discussing how urban sprawl leads harms air quality because people depend more on cars).

142. Kogel-Smucker, *supra* note 2, at 123 (quoting statistics regarding vehicular carbon-dioxide emissions).

143. *Id.* at 124 (explaining how urban sprawl causes environmental harm though water runoff).

144. *Id.* (detailing causes and process of water runoff).

145. *Id.* (noting additional ways in which urban sprawl threatens environmental harm).

146. Kogel-Smucker, *supra* note 2, at 112 (introducing stance of environmental advocates on state enterprise zone plans).

147. *Id.* (noting economic development advocates’ reaction to arguments that urban sprawl threatens environmental harm).

148. *Id.* at 124 (noting development advocates argue that vehicular emissions have many causes, and are only tangentially linked to urban sprawl).

grams to encourage smart growth should be implemented to prevent such environmental harm.

C. Impact of Priority Growth Areas and Zoning Incentives

There are several ways in which smart growth can be promoted. For instance, the need to control urban sprawl and unchecked growth in some areas of suburban communities has led some communities to “adopt priority growth districts [or] . . . areas.”¹⁴⁹ Municipalities also use incentive zoning to encourage developers to participate in community projects and accept stricter zoning restrictions. Such incentives are designed to control urban growth by preventing or limiting urban sprawl in priority growth districts. This incentive zoning encourages developers to provide public amenities and benefits that a community normally would not receive.¹⁵⁰ In exchange for these benefits, municipalities and towns permit more intensive development of land, such as the density bonus.¹⁵¹ These benefits include affordable housing units, new classroom construction, additional air space, special building features, or public art.¹⁵² If municipalities do not need the amenities incentive zoning schemes provide, they should ask developers to pay fees.¹⁵³ To determine the appropriate exchange of density for benefits, a municipality must consider the environmental impact of incentive zoning to determine whether the environmental impact could be harmful to environmental quality, natural resources, and agricultural land.¹⁵⁴ This requirement should be added to the obligations of conformation to health, welfare, and public safety that

149. Clark, *supra* note 3, at 257 (quoting, Jeremy Stone et al., *BREAKING GROUND: PLANNING AND BUILDING IN PRIORITY GROWTH DISTRICTS 3* (Jeremy Stone et al. eds., 2005)) (listing efforts to control urban sprawl in suburban areas).

150. See Jerold S. Kayden, *Market-Based Regulatory Approaches: A Comparative Discussion Of Environmental And Land Use Techniques In The United States*, 19 B.C. ENVTL. AFF. L. REV. 565, 568-69 (1992) (discussing how incentive zoning provides amenities and benefits to communities); *Incentive Zoning*, GEORGIA DEP'T OF COMMUNITY AFF., available at http://www.dca.state.ga.us/intra_nonpub/Toolkit/guides/incntvZng.pdf (last visited Feb. 28, 2013).

151. Clark, *supra* note 3, at 257 (providing advantages in land development made available through incentive zoning); see also Brian Ohm, *Guide to Community Planning in Wisconsin*, http://www.lic.wisc.edu/shapingdane/resources/planning/library/book/chapter06/chap6_3-4.htm (last visited Apr. 15, 2013) (defining density bonus).

152. See generally *Incentive Zoning*, *supra* note 149 (illustrating Georgia's incentive zoning programs).

153. Clark, *supra* note 2, at 257 (suggesting additional changes that could be made to improve incentive zoning).

154. See *id.* (discussing incentive programs and considering their environmental impact).

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municipalities consider when implementing incentive zoning.¹⁵⁵ Incentive zoning must consider environmental harm and its impact on the quality of life of the community.

VI. MINIMIZING ENVIRONMENTAL IMPACT OF ECONOMIC INCENTIVES

Properly designing economic incentives requires recognizing appropriate policy choices for local and state growth in order to accommodate public needs. These policy choices include establishing criteria for effective economic incentives and benchmarks to identify losses of environmental quality, natural resources, and agricultural land. Community policy-makers must consider whether effective economic incentives causing measurable environmental harm significantly undermine environmental policies. The amount of environmental harm may not need to be great when an incentive is economically ineffective and deteriorates the quality of life.

A. Tailoring Economic Incentive Programs to Minimize Environmental Harm

Local and state governments must design incentives that further the intended public objectives and meet public costs without unnecessarily burdening the other sources of revenue. Various economic incentives immediately cause an increase in economic and business growth, which directly impacts local and state revenues. Economic incentives may be successful, but business growth has costs that often may not be covered by tax revenues. Consequently, impact exactions and other sources of revenue must be acquired from developers, entrepreneurs, and workers in order to make up the difference.¹⁵⁶

Business organizations and developers must provide recognizable economic benefits and advantages to the state and community. These benefits must exceed any standard for harm to prime farmland, natural resources, and environmental quality.¹⁵⁷ One commentator states that “if unchecked, human activity can clearly lead to unacceptable levels of environmental degradation, causing catastrophic and irreversible harms. . . . Somewhere in the middle - between none and too much - is the ‘right’ level of environmental

155. *Id.* (providing ways in which incentive programs could be improved).

156. See *A Limitation on Development Impact Exactions*, *supra* note 4, at 27-28 (noting development’s additional costs that must somehow be offset).

157. Sinden, *supra* note 41, at 534 (analyzing economic benefits versus environmental harm).

exploitation.”¹⁵⁸ In the case of economic development incentives, the central challenge is the design of economic incentives that provide needed public benefits while not causing unnecessary environmental harm or reducing quality of life.¹⁵⁹

B. Targeting Benefits to Exclude and Change Harmful Incentives

Economic development incentives may be more effective if they are targeted to a specific region or business.¹⁶⁰ Targeting would avoid providing incentives to businesses that do not need them, but would still provide investments in the region.¹⁶¹ In addition, targeting would be designed to modify the behavior of firms needing incentives.¹⁶² Researchers have concluded that target incentives are 50% more effective at creating jobs.¹⁶³ As a means of coordination, targeting may ensure consistency and continuity among various policies and programs.¹⁶⁴ Targeting could also be used to ensure incentives are given to appropriate businesses and regions in such a manner as to increase the workforce, boost tax revenues, and avoid environmental harm.¹⁶⁵ Currently, the manner in which targeting is being used appears to only further economic objectives, not environmental objectives. Targeting would be more effective if the measure of effectiveness included the mag-

158. *Id.* (noting interplay between economic growth and environmental hazard regarding development).

159. *Id.* (noting economic incentives mandate weighing economic benefits against potential environmental harm).

160. Sherry L. Jarrell et. al., *Economic Development Incentives and the Legal and Economic Issues of Open Versus Sealed Bids*, 7 S.C. J. INT’L L. & BUS. 227, 242 (2011) (citing research stating that “if used judiciously, the EDI process can isolate the most beneficial offers”).

161. *Id.* at 242-243 (discussing how targeting might make economic incentives more effective).

162. Gorin, *supra* note 1 (noting benefits of targeted economic incentives).

163. *Id.* (noting increased effectiveness of targeted economic incentives).

164. Ivan C. Dale, *Economic Development Incentives, Accountability Legislation and A Double Negative Commerce Clause*, 46 ST. LOUIS U. L.J. 247, 260 (2002) (discussing that although “development incentives are specifically targeted, their statutory authority often makes incentives available to any corporation meeting certain minimum requirements and willing to relocate within the state”). For example, in Maryland, there is a statute that provides an automatic income tax credit to any in-state business that creates or expands a facility that results in sixty or more jobs. MD. CODE ANN. art. 83A, § 5-1102 (2000).

165. See James E. Holloway & Donald C. Guy, *Rethinking Local and State Agricultural Land Use and Natural Resource Policies: Coordinating Programs to Address the Interdependency and Combined Losses of Farms, Soils, and Farmland*, 5 J. LAND USE & ENVTL. L. 379 (1990) (examining and explaining interdependency among farm management, farmland preservation, and soil and water conservation policies and need to coordinate mutually beneficial federal farm and natural resources programs).

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nitude and nature of environmental harm. Targeting could provide economic incentives to businesses or firms that seek to minimize environmental harm by designing commercial, residential, and economic development projects to avoid losses of natural resources and decreases in environmental quality.

Currently, local governments do not identify environmental impact as a measure of effectiveness; they only identify environmental regulation as a barrier.¹⁶⁶ Local governments also identify poor quality of life as a barrier to using economic incentives.¹⁶⁷ One commentator notes that “a critical evaluation of [enterprise zone] programs requires both an evaluation of the programs’ environmental impact and of their success at job creation.”¹⁶⁸ Targeting would be more effective than traditional economic development incentives if policymakers include environmental harm as a factor to measure effectiveness rather than allowing administrators to consider environmental regulation as an economic barrier.¹⁶⁹

C. Using Environmental Impact as a Measure of Effectiveness

County, municipal, and state governments should reevaluate the economic incentives that they use to encourage development. They should determine how to include an environmental assessment in their application criteria for economic incentives. This assessment should include a measure of an economic incentive’s impacts on environmental quality, natural resources, and agricultural land. Federal regulations already require an environmental impact assessment for many governmental projects.¹⁷⁰ Similar to

166. Zheng & Warner, *supra* note 1, at 329-30 (listing business incentive measures of effectiveness and barriers to using such incentives).

167. *Id.* (discussing quality of life vis-à-vis economic incentives).

168. Kogel-Smucker, *supra* note 2, at 112 (citing John Engberg & Robert Greenbaum, *State Enterprise Zones and Local Housing Markets*, 10 J. OF HOUSING RES. 163, 165 (1999)).

169. *Id.* at 126 (citing Richard Toshiyuki Drury, *Rousing the Restless Majority: The Need for a Blue-Green-Brown Alliance*, 19 J. ENVTL. L. & LITIG. 5, 16-17 (2004)). Kogel-Smucker states that “[c]hallenging the notion that communities must choose between jobs and environmental conservation, some economists have argued that the impact of environmental regulations on jobs is unproven or exaggerated and that environmental regulations can have a positive effect on jobs.” *Id.*

170. *See generally* National Environmental Policy Act (NEPA), 42 U.S.C. § 4332 (2006 and Supp. III). NEPA mandates that federal agencies conduct environmental impact analyses to assess the impact of federal legislation and other actions on the “quality of the human environment.” *Id.* The pertinent provisions of NEPA state:

§ 4332. Cooperation of agencies; reports; availability of information; recommendations; international and national coordination of efforts . . .
(2) all agencies of the Federal Government shall—

the federal assessments, state or local economic incentive assessments could measure environmental harm and its impact on business and quality of life by analyzing potential effects on quality of land, air, and water. And, as public benefits depend on the economic success of business projects, the economic risks, business uncertainties, and financial feasibility of private business projects must also be part of the assessment of economic incentives.¹⁷¹ The state should assess the market, financial, economic, and political risks and uncertainties of a business project so as to completely understand the impact of an economic incentive.

Any deterioration of quality of life will affect families, visitors, neighborhoods, businesses, social institutions, and future generations. Economic incentives that reduce quality of life may make the benefits less valuable. Community policymakers can use these assessments in their consideration of the long-term consequences of private developments that may force the community to adjust to a decline in the quality of life that results when the condition of open space, clean lakes, and blue skies decline.

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man's environment; . . .

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—

- (i) the environmental impact of the proposed action,
- (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
- (iii) alternatives to the proposed action,
- (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
- (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards, shall be made available to the President, the Council on Environmental Quality and to the public as provided by section 552 of title 5, and shall accompany the proposal through the existing agency review processes. . . .

42 U.S.C. § 4332 (2006 & Supp. III).

171. See Richard M. Barron, *Dell to Close its Winston-Salem Plant*, NEWS-RECORD (Oct. 8, 2009), <http://www.ncicl.org/article/177> (illustrating how local economies suffer when businesses that were given economic incentives fail). Dell “quickly pledged to abide by its contracts and repay much of the money it had received . . . That pledge won’t lessen the sting of massive layoffs hitting area counties during this harsh recession.” *Id.*

VII. CONCLUSION

Policymakers must consider and monitor the effectiveness and environmental impact of economic development incentives. Assessments of the environmental impact should be used by state and local governments to make and implement economic incentives. Although policymakers and administrators consider economic, social, and fiscal benefits to measure effectiveness of economic incentives, they must also objectively measure the impact of economic incentives on environmental quality, natural resources, and agricultural lands. Environmental harm is likely to degrade quality of life, displace established businesses, and undermine the very societal objectives economic incentives are designed to meet.

Federal, state, and local policymakers must determine whether public and economic benefits always outweigh the environmental harm where economic incentives destroy environmental resources and threaten a community's quality of life. Most significantly, policymakers must revise or repeal ineffective incentives that cause environmental harm. State and local policymakers must consider whether the environmental harm caused by an effective economic incentive can ever be fully offset by economic gains and public benefits if environmental harm degrades quality of life and displaces established businesses and residents.