

Forecasting Benefits and Public Returns for Brownfield Redevelopment

Overview and Case Studies on
Economic and Fiscal Impact Analysis

→ Have you ever wanted to quantify the potential or observed impact of a brownfields project?

Economic impact and fiscal impact analyses are two related techniques used for regional policy and local redevelopment analysis. They can be used to estimate the impact of potential and planned brownfields redevelopment or to evaluate impact after development is complete.

Economic Impact Analysis

- ✓ Insights on employment, wages, and business/industry activities.
- ✓ Direct impact from redevelopment activities, such as construction, operation, and maintenance.
- ✓ Economy-wide ripple effects, such as increased local spending in services, resulting from redevelopment activity.

Fiscal Impact Analysis

- ✓ Evaluate changes in public sector revenues, which includes costs and taxes resulting from business-to-business purchases and household economic activities.
- ✓ Specific to a jurisdiction's taxation, revenue structure, and related administrative costs.

Key user groups of economic and fiscal analysis are:

Municipal Leaders and Staff: Those representing public interests across all levels of government, such as elected officials, planners, economic developers, finance directors, and redevelopment agencies.

Community Groups: Those representing the community and those likely to be affected by redevelopment, such as community members, local advocates, neighborhood coalitions, activists, site owners, and adjacent property owners.

Private Interests: Those representing private interests that will benefit from investment in redevelopment, such as private developers, funders, and potential businesses and tenants.

Summary

Communities often struggle with how to estimate economic benefits and fiscal impacts from planned brownfields redevelopment projects. This short guide can help communities understand what economic and fiscal impact analyses are and how to use these analyses to support local decisions regarding brownfields assessment, cleanup, and reuse. This guide is based on technical assistance provided to several communities under EPA's Land Revitalization Program.

Economic Impact Analysis

Economic impact analyses evaluate economic factors to provide overall insights on employment, wages, business/industry activities, and other economy-wide ripple effects of redevelopment activity.

Analyses consider not only the immediate effect of the redevelopment of a specific property, but also the impact generated from related follow-on activity, such as when workers spend their wages locally on everyday items like groceries, doctor visits, and rent.

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Fiscal Impact Analysis

Fiscal impact analyses evaluate economic activities to calculate projected changes in public sector revenues, including costs and taxes. Elements analyzed include business-to-business purchase patterns and household economic activities that generate different sources tax revenue.

Analyses integrate the jurisdiction's taxation, revenue structure, and related costs to evaluate the positive or negative impacts on government revenues generated by redevelopment.

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Economic Impact Analysis

Assessing economy-wide ripple effects

Overview

An economic impact analysis can answer these questions:

- Which regional industries will benefit the most from project spending associated with the brownfield redevelopment?
- How many jobs will be created and in which industries?
- How much economic impact is lost to spending and imports of material and labor outside of the region?
- How much tax revenue can the local and regional government expect to receive from project-related activity?

Regional economic impact modeling is founded on the principle that industry sectors are interdependent: one business purchases inputs (such as labor, goods, and services) from other industries and, in turn, sells their own outputs. Therefore, economic activity in one sector causes an increased flow of money throughout the economy, which translates to increased jobs and wages and overall spending. **Regional economic impacts are generally reported as the total change in economic indicators across all economic sectors that result from the project.**

Regional economic modeling is typically conducted by a professional economics consultant, combining inputs from the community with publicly available data or proprietary data, as needed. While regional economic modeling is generally considered a robust and accepted analysis, many economic models use complex methodologies, and incorrect inputs or improper calibration can lead to inflated results. Thus, these models are best run and interpreted by professionals.

Applying Economic Impact Analysis:



CASE STUDY OVERVIEW¹

The Town is looking to conduct an economic impact analysis for the planned redevelopment of four brownfield sites containing paper mills. The Town intends to convert the former mill buildings into a mixed-used campus with biotech manufacturing, residential, and commercial uses.

The paper mills are located in a 700-acre historic industrial area surrounded by densely developed residential neighborhood, former mill housing, and downtown. While the industrial history of the area included agriculture, lumbering, textiles and paper mill uses, the economic base has broadened in recent years to include small-scale manufacturing, research, and service industries. The Town sees this redevelopment as an opportunity to bring in much needed economic activity to the region.

The Town and its development partners want to understand the type of economic impact a redevelopment of this scale would bring.

As biotech manufacturing is still a relatively new industry in the area, the community is eager to understand the expected long-term job prospects to understand if workforce training is needed.

Project Statistics:

Location:

Town in Massachusetts,
EPA Region 1

Conducted on behalf of:

City Government

Population:

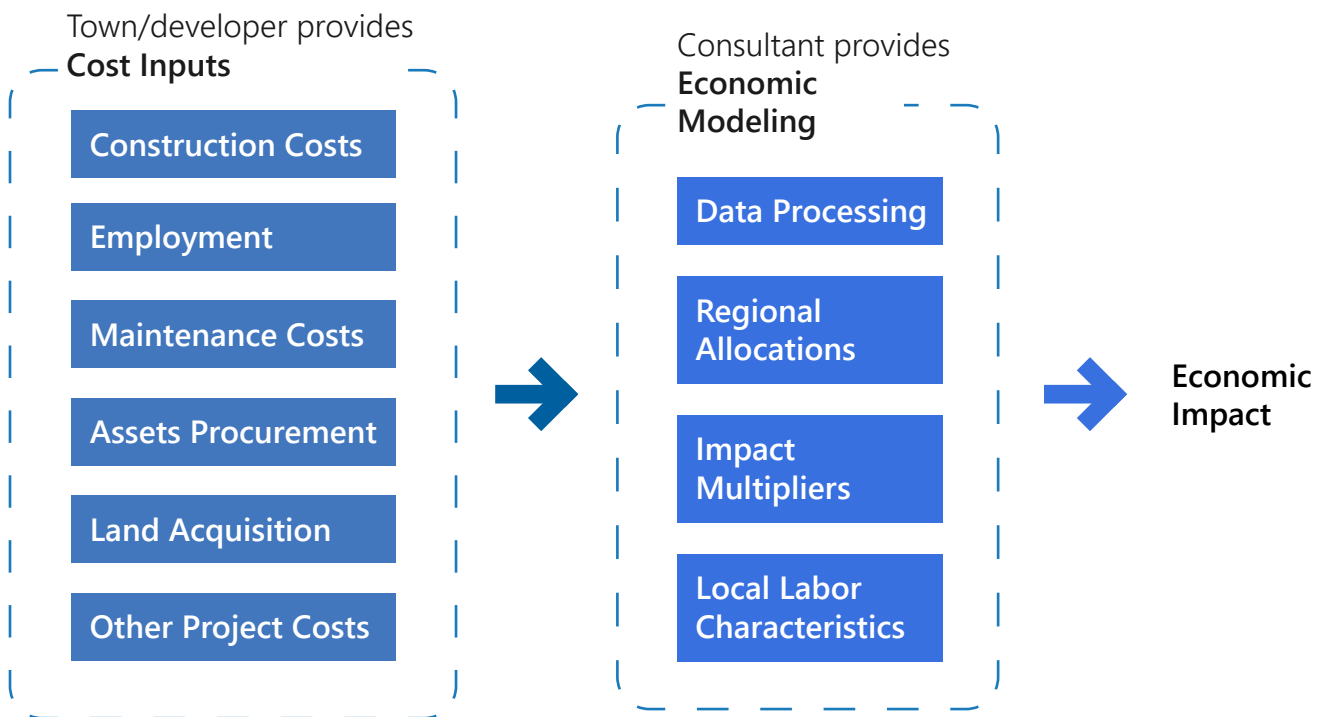
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¹ Case studies have been anonymized to protect ongoing projects still undergoing the redevelopment process.

ANALYSIS – INPUTS

- 1 How many **regional jobs are created during the site construction phase** and **annually during operation** for each use type?
- 2 What **regional industries will benefit** from site construction and ongoing operation for each use type?
- 3 What **taxes might be generated regionally and nationally** because of site construction and on-going operation.

The analysis will estimate the region-wide impact of the redevelopment. To answer these questions, data provided by the Town was analyzed and modeled in combination with other publicly available data sources, with the support of paid economic models.



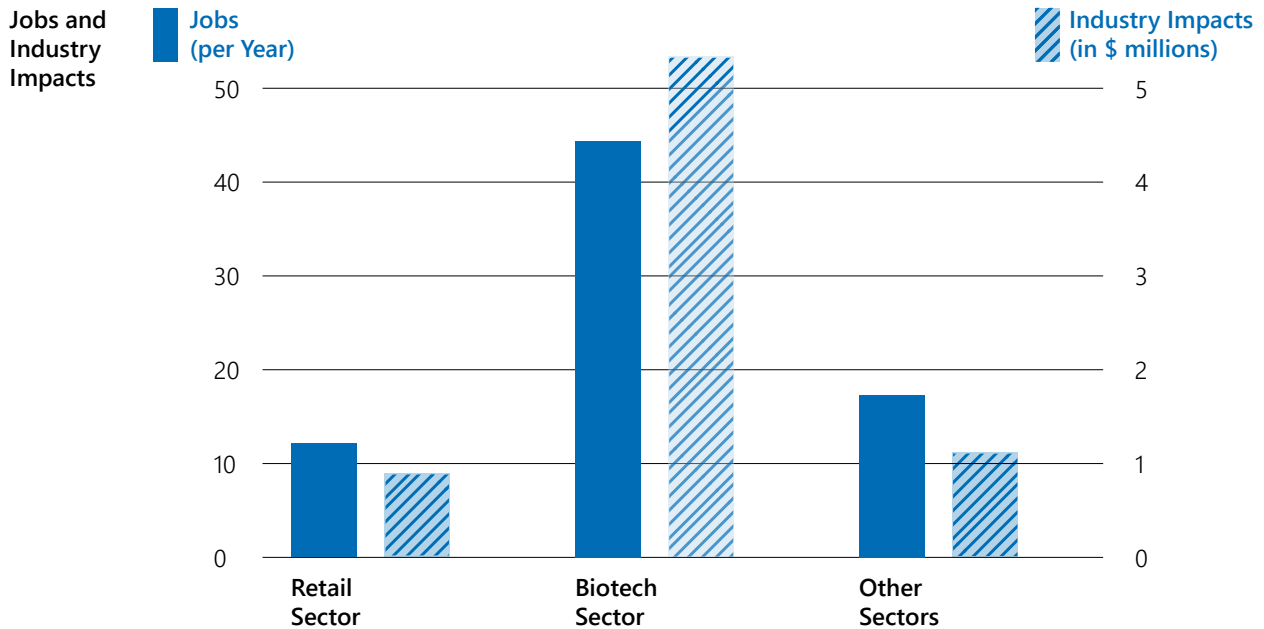
IMPACT STUDY BENEFITS

Economic impact analysis is a tool for understanding the region-wide ripple effects of larger redevelopment projects. While particular projects may have a large overall impact, these economic benefits may not occur locally. The analysis provided the Town with an understanding of where new jobs are being created, what equipment and supply chains are managed locally, and consequently, the type and magnitude of economic impact felt locally and within the region.

Using the economic impact analysis, the Town has identified related industries that are projected to grow but may need further workforce development to support biotech redevelopment of the four paper mills. **Equipped with this information, the Town has begun collaboration with regional economic development agencies and private developers on how the paper mill redevelopment can bolster overall industry growth in the area.**

IMPACT ESTIMATES

- **Largest growth in the biotech sector, with an estimate of over \$5 million in direct economic impacts and 45 jobs per year.**
- **Indirect and spillover impacts in other sectors, such as retail, create additional jobs.**
- **Import of specialized biotech equipment may be captured through longer term economic development in biotech manufacturing if the biotech sector continues to grow in the region.**





Fiscal Impact Analysis

Assessing
impacts on tax
revenue

Overview

A fiscal impact analysis can answer these questions:

- What is the expected increase in property taxes after redevelopment?
- How many new households will redevelopment support?
- What is the increase in sales tax generated from new residential spending?
- What is the increase in sales tax generated from new business spending?
- How will new tax revenue be allocated depending on different taxation structures for redevelopment?
- What is an appropriate level of public investment for a redevelopment project?

Fiscal impact analysis typically measures the impact on the community that may be supporting or funding the redevelopment project, which may include different entities including counties, municipalities, and other special purpose districts. It enables decision-makers to evaluate the appropriate level of public investment and maximize public rates of social and financial return to ensure development activities align with local vision and community priorities.

Because of its nature, **fiscal impact analysis requires more on-the-ground research into local tax policy, real estate markets, and existing business sectors.**

Fiscal impact analysis is typically conducted by a professional economics consultant, combining inputs from the client with other publicly available and sometimes proprietary data. Analysis is usually conducted on an annual, multi-year basis over the project lifetime and uses financial modeling instead of econometric statistical modeling. This process lends itself well to transparently reporting assumptions, calculations, and findings.

Applying Fiscal Impact Analysis:



CASE STUDY OVERVIEW¹

A small town in western Colorado is looking to revitalize its core district. Historically, the district was home to heavy industrial uses. The current comprehensive plan and community visioning both advocate for redevelopment of a few brownfield sites located in the core of downtown into mixed-use developments including retail, residential, and entertainment uses. However, the brownfield sites are not shovel ready and require investment to further address environmental pollution, demolish derelict buildings, and upgrade utilities, among other challenges.

A private developer approached the Town proposing redevelopment that would meet the Town's vision. However, because of the investment needed to prepare the site, the developer proposed that the Town partner on the project by providing financial incentives. Without the Town's support, redevelopment would be cost-prohibitive. On the other hand, the Town is uncertain what magnitude of financial incentives would be appropriate to maximize public benefits without providing disproportionate windfall profits for the developer from the funding.

The Town is looking to conduct a fiscal impact analysis to estimate amount of public investment needed to enable development without exceeding a market-typical profit rate for the developer.

Project Statistics:

Location:

Town in Western Colorado,
EPA Region 8

Conducted on behalf of:

Town Government

Population:

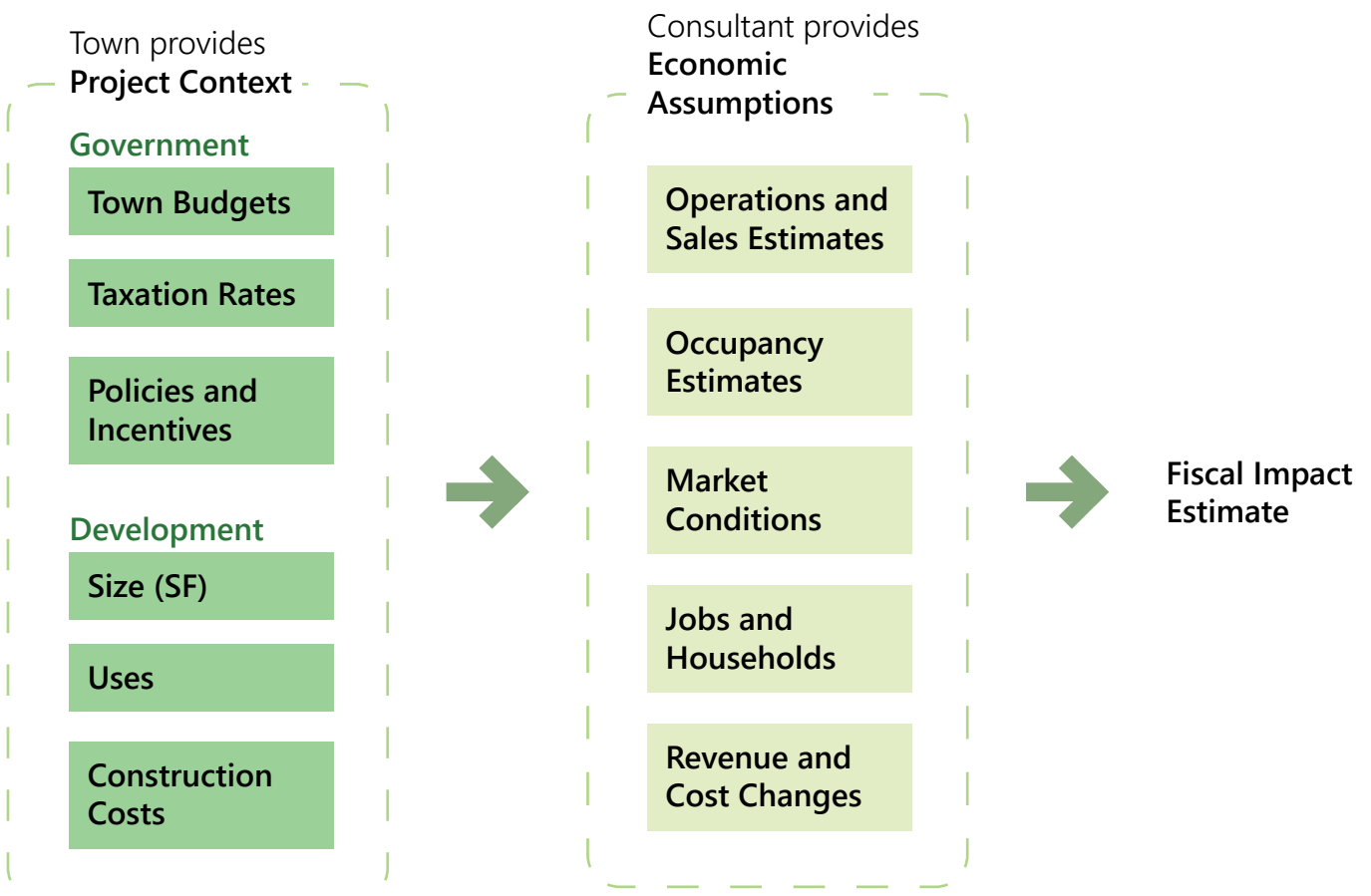
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¹ Case studies have been anonymized to protect ongoing projects still undergoing the redevelopment process.

ANALYSIS – INPUTS

- 1 What is the **local tax rate applied** to each proposed use type?
- 2 Are there **alternative taxation mechanisms** such a Tax Increment Finance (TIF) or Business Improvement District (BID) that could be employed?
- 3 What **sales taxes** are expected to be generated from retail activity?
- 4 What are **other sources of local revenue that could be leveraged**?

The analysis aims to identify the amount of investment needed for a public-private partnership. The analysis combines several sources of data as inputs to assess changes in tax revenue. Inputs include both numeric and process information, such as taxation rates, taxation policy, and revenue allocations. Data provided by the Town are then analyzed and modeled in combination with other publicly available and paid data sources.



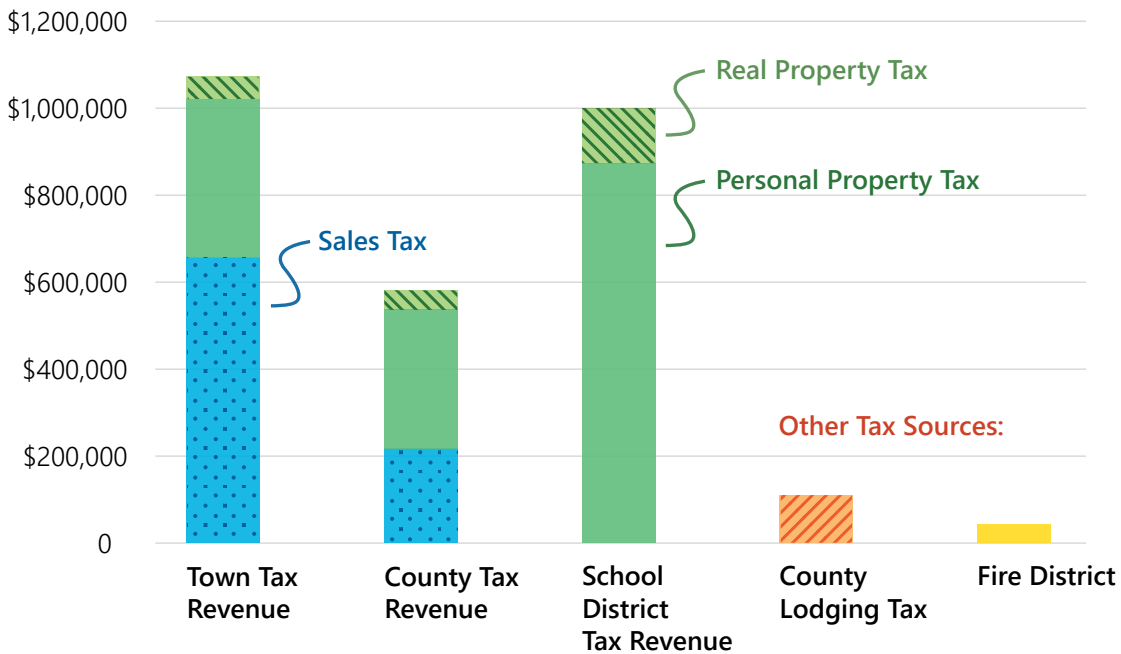
IMPACT STUDY BENEFITS

Fiscal Impact Analysis is a tool for understanding the impact of redevelopment in terms of municipal revenues and costs and thus can be used to determine the level of public investment that creates financial and social benefits. Throughout the process of the fiscal impact analysis, interviews were conducted with local supporters and stakeholders, such as the town manager, finance director, and planning director to understand the priorities of the town. The fiscal impact analysis output provided key estimates such as tax revenue for town entities, pictured below. These estimates support the Town’s evaluation of the project and provide a basis for developing incentives, negotiation, and qualifying public investments. **Equipped with this information, the Town is actively working with the developer on a solid public and private partnership for the redevelopment.**

IMPACT ESTIMATES

- The development will create 408 housing units and 78 short term rentals.
- The project will generate \$1 million in annual town tax and \$589,000 in annual county tax through property taxes and sales taxes, as well as \$1 million in school district taxes.
- Total taxes distributed to each level of government and districts will inform the ceiling of investment to maximize efficiency of public funds.

Expect Annual Tax Revenues by Source:
 Total expected annual tax revenues from project operations will inform the upper limit of public investments.



Additional Informational Resources

Economic impact analysis and fiscal impact analysis are Eligible Planning Activities under an EPA Brownfield Assessment or Multipurpose Grant. For more information on related programs, please visit the resources below.

[Land Revitalization | U.S. EPA](#)

[Brownfields | U.S. EPA](#)

[Eligible Planning Activities | U.S. EPA](#)

