

**MLD-412 Selected Projects**  
**Professor Linda J. Bilmes**  
**Greater Boston Applied Field Learning Lab/Bloomberg Cities Field Lab**

**Summer Projects 2020**

- Massport: Research into governance structures for a future Boston seafood industry association.
- MBTA: Re-design of policies and processes for COVID-19 response and service continuity; research to support the conversion of MBTA contractors to full time employees; development of performance evaluation concepts for Transit Priority team; creation of a joint procurement RFP; estimate impact on the operating budget of upcoming Green Line Fleet capital investments.
- Hingham: Evaluation of capital planning processes and assistance to Hingham Public Schools with planning for reopening in September, addressing COVID-19 needs.
- Gloucester: Further development of a financial model and a draft communications strategy for the proposed multiuse performance and event facility.
- Austin, TX: Creation of a barrier audit survey to assist Austin Public Health with contracting processes, focusing on the need for greater equity consideration.
- Rochester, NY: Research on the gap between affordable and available housing in Rochester.
- Trenton, NJ: Development of a white paper report from research completed in the spring with City of Trenton concerning the unique costs borne by capital cities.
- Somerville: Assistance in evaluating and recommending e-signature software for the launch of digital signatures on legal documentation in Somerville.
- Salem: Collaborative research with City of Salem, MA and the Office of the MA 6<sup>th</sup> Congressional District in developing a plan to help small businesses facing losses due to COVID-19; research into possible funding opportunities.

**Spring Semester 2020**

- Hingham: Developed a strategic plan for stormwater mitigation and identified funding to protect local waterways.
- Gloucester: Created a financial model for a proposed multiuse performance and event facility.
- Massport: Researched and identified business activities across the Boston seafood cluster: identified the organizations involved; highlighted strengths/weaknesses; noted threats and opportunities.
- MBTA: Designed a cost-benefit analysis of strategic options for the South Boston Power Complex: how best to use the asset, maintain critical functions, and weigh environmental and community concerns.
- Austin, TX: Researched Austin Public Health contracting processes and identified ways they could be improved with a focus on equity considerations.
- Rochester, NY: Researched the affordable housing environment in Rochester and provided a cost-benefit analysis for policy options to encourage more equitable outcomes.
- Trenton, NJ: Analyzed unique costs incurred by capital cities, through a case study of City of Trenton.

### **Summer Projects 2019**

- Somerville: Assistance in the launch of a first-ever Community Land Trust in Somerville.
- Boston Public Schools: Collaborative research with BPS and City of Boston around the creation of new analytical models specifically for education.
- MBTA: Estimated impact on operating budget of upcoming Red Line Fleet Replacement capital investments.
- MA 6<sup>th</sup> Congressional District: Development of a white paper report from research into the cost of roads completed in the spring for Congressman Moulton.
- Manchester, NH: Research on drivers of youth homelessness.
- Hartford, CT: Development of new processes around bulky waste enforcement procedures.
- Halifax, NS: Development of a broad framework to look at future growth in Halifax and related costs.

### **Spring Semester 2019**

- City of Somerville, MA: Examined whether a Community Land Trust would enable the city to better address affordable housing issues based on analysis of best practices from CLTS nationwide and detailed financial model.
- MA 6<sup>th</sup> Congressional District/City of Lynn: Analysis of the full state and local costs of Massachusetts roads when including indirect expenses and externalities, such as emissions and traffic congestion. Local model based on extrapolation of costs from Lynn, MA.
- MBTA – Created a financial model to forecast the operating budget impacts of the Orange Line Fleet Replacement project.
- MBTA – Climate Resiliency: Examined MBTA climate resiliency plans and proposed new framework based on detailed examination of risks at Orient Heights Maintenance Facility.
- Manchester, NH: Analyzed how public/non-profit/state resources are currently being allocated for homeless prevention across the city and then explored how those funds might be better utilized to build a more effective delivery system.
- Hartford, CT: Analyzed budget and operational impact of recent changes to Hartford's bulky waste collection system and identified areas for improvement.
- Halifax, NS: Created a framework for the new 20-year regional development plan land based on land use planning, social and environmental factors.

### **Summer Projects 2018**

- Phoenix, AZ: Created tools to assist city and regional transit authority with their pilot projects for mitigating the effects of heat on public transportation use with a focus on areas with low car ownership
- Long Beach, CA: Researched and evaluated options for efficiencies in how city responds to illegal dumping
- City of Revere: Analyzed a new waste collection enterprise fund and a modernized parking meter program and created dynamic financial models to inform the mayor's staff on the short and long-term budget implications of the new initiatives
- MBTA: Analyzed the asset management of the MBTA's emergency backup traction power facility, which also earns revenue through participation in energy markets

- MBTA: Developed a quantitative analysis to project the impact of the Capital Investment Program on the age, condition, and performance of capital assets
- MBTA: Analyzed the cleaning contract with the goal of improving the customer experience
- MBTA: Conducted analysis to inform design of new performance measurement and incentive schemes for contracts costing the transit authority more than \$15 million per year

### **Spring Semester AY 2018**

- Phoenix, AZ: Analyzed effects of extreme heat on public transit use and options for mitigating those effects and updated transit propensity model
- Long Beach, CA: Analysis of public works/environmental services policies with mapping and customer journey analysis of illegal dumping crisis
- Newburyport & MA 6<sup>th</sup> US Congressional District: Analyzed the costs and benefits of the National Flood Insurance Program's Community Rating System (CRS) and created guides for how to apply for the CRS
- MBTA: Life-cycle cost analysis of assets, focused on commuter rail platforms
- MBTA: Created strategy and tool for transit facilities maintenance department to help it decide which functions should be contracted out and which should be done by MBTA staff
- MBTA: Created and improved contract management strategy and developed assessment tools
- Revere: Analyzed budget and operating procedures for the Department of Public Works, which included doing an activity-based costs analysis for potholes.

### **Summer Projects 2017**

- North South Rail Link: Wrote and published a white paper with a cost estimate for the project
- MBTA: Improved data collection systems and created an RFP for their commercial banking relationship
- Neighborly: Expanded and updated the model developed for California and cities across the US

### **Spring Semester 2017**

- MBTA: Activity-based cost analysis for procurement system
- MBTA: Evaluation of the "state of good repair" inventory database across MBTA
- North South Rail Link/Congressman Seth Moulton: Cost estimate for linking North and South Stations
- Neighborly/Cambridge/Somerville: Developed criteria for issuing micro-bonds for cities above 50,000 population in New England
- Boston: Analyzed options for revenue generation under different tax scenarios

### **MBTA, Salem, State of MA, Department of Revenue (DOR) AY 2016**

- MBTA: Analyzed cost structure of bus repair system in the Everett Garage and feeder garages
- MBTA: Analyzed overtime costs in MBTA across system
- MBTA: Developed and evaluated cost and service-delivery benefits to alternatives to the RIDE (e.g., Uber and Lyft)
- Salem: Analyzed cost structure of senior transit system and evaluated alternatives under different population scenarios

- DOR: Developed new way of recognizing receivables for State of MA to resolve balance sheet material weaknesses
- DOR: Analyzed costs and alternatives to Settlement-in-place tax system for non-payers

### **Summer Projects 2016**

- MBTA: Developed Uber/Lyft alternatives to the RIDE
- MBTA: Piloted Charlie card alternatives for Fenway Park
- Boston Redevelopment Agency: Developed plan for subsidies to affordable office space for start-ups

### **Boston, Somerville, Newton, and MA State Legislature AY 2014**

- Somerville: Studied impact of proposed MLS soccer stadium on jobs, parking, economic development of city
- Somerville: Modeled options for management of city-held real estate assets
- Boston: Analyzed "Late Night" Initiative to extend hours for bars, restaurants etc., impact on crime, vandalism, economic activity
- Boston: Study of how transition from Mayor's Hotline to a "311" line would affect call volumes, and service
- Newton: Developed metrics for evaluation performance of veteran's transition center
- MA legislature Joint Committee on Education: Analysis of Extended Learning Time schools and funding options for expansion

### **Boston, Somerville, Cambridge, and Sea Bright New Jersey AY 2013**

- Boston: Analysis of costs to run a new ferry line between East Boston and the Innovation District
- Cambridge: Analysis of implications of changes to federal tax deduction for municipal bonds (conducted for Cambridge, and presented to National League of Cities)
- Sea Bright NJ: Analysis of funding options for different population segments in recovery from Hurricane Sandy and fast-tracking tool (Sea Bright, NJ)
- Somerville: Evaluated fixed-asset management, including vehicles and IT

### **Boston, Somerville, Newton, and Perkins School AY 2012**

- Boston: Analyzed municipally provided snow plowing and street sweeping compared to services provided by private contractors in Boston
- Boston: Developed pricing and contract strategy for Hubway, Boston's Bikeshare program, with its private Alta partners; developed expansion strategy
- Somerville: Designed capital plan and operating model for a new recreational center in Foss Park
- Somerville: Analyzed potential use of demand-based parking
- Newton: Developed model for a municipal program for employment services for returning veterans
- Perkins School: Analysis of streamlining food services at the Perkins School, with a focus on cost savings and risk management

### **Boston AY 2010**

- Economics of expanding city trash and recycling collections to Non-profits
- Capacity and cost analysis for expanding usage of Harbor Islands

- Modeling financial options for city role in sustainable financing for the Greenway
- Analysis of savings from restructuring claims process for workforce health and safety accidents
- Analysis of costs savings from consolidation of parking and other miscellaneous revenue collections

#### **Boston AY 2009**

- Scenario Modeling for Variable Rate Parking
- Fiscal Impact Analysis of Consolidating Boston's Emergency Services Communications
- Vehicle Fleet Optimization
- Street Lights: Evaluating the Cost of In-House Maintenance: vs. Outsourcing
- An Analysis of Efficiency Gains in Boston's Snowplowing Operations

#### **Somerville School District AY 2008**

- Evaluated the fiscal impact of charter schools on Somerville Public Schools budget
- Analyzed the cost drivers to the city of providing custodial and maintenance for the school district
- Surveyed prospective teachers to optimize investments in recruitment/retention incentives
- Developed a fiscal rescue package for after school programs that were losing state grant funding
- Identified the cost drivers and total costs of special education

#### **Somerville AY 2005 – 2008**

- Designed template for implementing an activity-based budget in 2 departments
- Converted line-item budget to program format in all 17 departments
- Translated data from each department into program formats
- Assisted in the development and setting of performance targets for "Somerstat"
- Assisted in evaluating 311 line

#### **Newton AY 2008**

- Created an activity-based budgeting model in the parks and recreation department
- Built a capital budget for long-term construction, modeling financing options of a new high school (Newton North)
- Benchmarked financial data compared with other local cities
- Developed a revenue forecasting model under different growth scenarios

#### **Hull AY 2007**

- Analyzed whether the Town of Hull would save money for taxpayers by participating in the Community Rating System program for flood insurance, operated by FEMA