

Amazon Robotics Sortation Center

Charlton, Massachusetts

Community Impact Assessment

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Impact Summary

At the town of Charlton’s request, Barrett Planning Group LLC has prepared an analysis of the potential benefits that will be associated with the proposed Amazon Robotics Sortation Center on Sturbridge Road. We used two different analytical models to understand the project’s financial impact on Charlton. Doing so has enabled us to estimate the impact as a “high-low” range of outcomes. We find that when the proposed facility is completed and occupied, it will bring the following fiscal advantages to the Town:

Model 1: “High Estimate”

- Facility Size: 2,855,000 million square feet (sq. ft.)
- Total Estimated Assessed Value: \$215,000,000
- Total Estimated Cost to Provide Services to Facility: \$488,800

Cost-Benefit Summary		
Tax Revenue Gains/Loss	Year 1	Year 10
Total Estimated Revenue <i>with TIF</i>	\$2,885,600	\$3,184,900
Revenue Ratio (Costs/Revenue)	0.169	0.153
Net Revenue (Surplus):	\$2,396,800	\$2,696,100

The numbers in this table mean that for every \$1.00 the Town receives in new tax revenue from this facility, the Town will spend 15 to 17 cents on municipal services.

Model 2: “Lower Estimate”

Total Estimated New Direct/Indirect Employment: 1,462

Existing Average Cost of Nonresidential Services per Local Worker: \$300

Estimated Cost to the Town, Facility-Generated Employment Increase: \$ \$438,600

Cost-Benefit Summary		
Tax Revenue Gains/Loss	Year 1	Year 10
Total Estimated Revenue <i>with TIF</i>	\$2,885,600	\$3,184,900
Revenue Ratio (Costs/Revenue)	0.152	0.138
Net Revenue (Surplus):	\$2,447,000	\$2,746,300

The numbers in this table mean that for every \$1.00 the Town receives in new tax revenue from this facility, the Town will spend 14 to 15 cents on municipal services. Accordingly, the “high/low” new cost of municipal services ranges from \$488,800 to \$438,600. The two models support the same general conclusion: Charlton stands to gain \$6 to \$7 in new revenue for every \$1 spent on municipal services as a direct result of the Amazon Robotics Sortation Center.

Introduction

Barrett Planning Group has prepared this community benefits analysis at the request of the Town of Charlton. The Town is considering an application from Blue Water Development LLC (Blue Water) to develop 2.85 million square feet (sq. ft.) of warehouse and distribution facilities on Sturbridge Road and an associated Tax Increment Financing (TIF) Agreement for the project. The site consists of four parcels with a combined total of 104 acres. The largest of the four parcels currently includes dwelling units and active agricultural land. Blue Water plans to demolish the existing structures and clear and re-grade roughly half of the site for utility installations, access roads, retaining walls, and surface parking, along with a multi-story warehouse that will cover 650,000 square feet and stand 100+ feet in height. The project capitalizes on (and was the impetus for) a May 2021 zoning change allowing the Planning Board to grant a special permit in the Business Enterprise Park (BEP) District to increase the maximum building height to 110 feet on sites of 75 acres or more, subject to generous setback requirements.¹ Though not identified before Town Meeting as the eventual tenant, Amazon was widely rumored to be Blue Water's client.

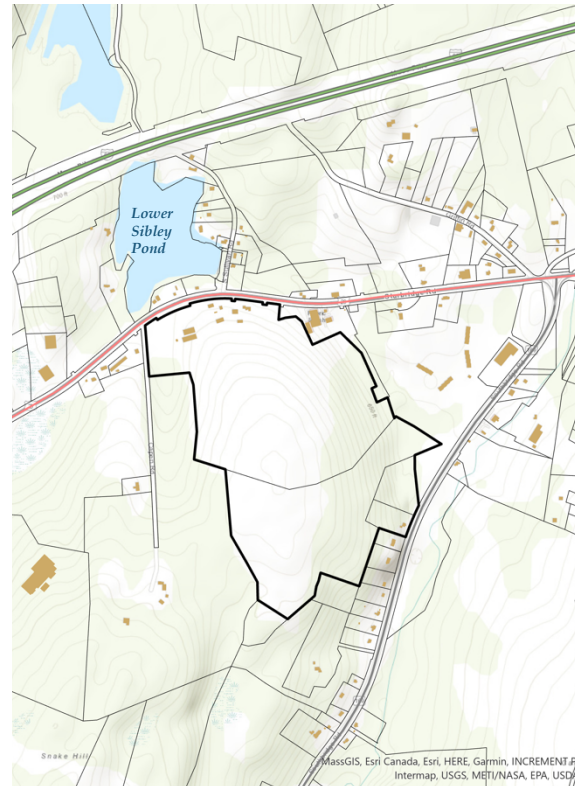


Fig. 1. Site of proposed Amazon Robotics Sortation Center, Charlton, Massachusetts.

In June 2021, Blue Water filed on Amazon's behalf an Environmental Notification Form (ENF) with the Massachusetts Office of Energy and Environmental Affairs (EOEEA) and a site plan and special permit application with the Charlton Planning Board. A month later, EOEEA directed the applicants to prepare an Environmental Impact Report (EIR) because the proposed development triggers several thresholds under the Massachusetts Environmental

¹ ATM 2021, Article 17. To qualify for the special permit, the nearest portion of the building must be at least three times the usual minimum setback from any nearby residential dwelling or residential or agricultural zoning district. For the BEP District, this would mean a setback of at least 150 feet. According to the proponent's site plan, the minimum setback for the building, measured in accordance with Article 17, is 282 feet.

Policy Act (MEPA), notably those involving disturbance of undeveloped land and new impervious coverage, wetlands alteration, traffic and parking, and growth in demands on water and wastewater systems. In short, the proposed project requires permits and approvals from multiple state agencies as well as the Town of Charlton.

Amazon plans to lease the site as a “robotics sortation center,” or a distribution facility operated in part with the assistance of robotic helpers. These “small sortables” facilities handle packing and shipping orders such as books, toys, jewelry, housewares – literally small items – to smaller distribution sites and customers within designated regional service areas. The recently approved Amazon Robotics Distribution Center in North Andover (pictured here, under construction two months ago) is very similar to the project Blue Water plans to construct in Charlton.



Fig. 2. North Andover Amazon Robotics Sortation Facility, 1600 Osgood Street. Construction as of September 2021.

TIF Agreement

In addition to needing the Planning Board’s special permit, Amazon is asking the Town to execute a 10-year Tax Increment Financing (TIF) Agreement to help offset some of the site development and infrastructure costs associated with the development. In Massachusetts, TIF is a mechanism for reducing a developer’s real estate tax obligations, temporarily, in exchange for building new facilities and creating new jobs in a community.² TIF Agreements provide for a declining real estate tax discount over several years, but developer remains responsible for 100 percent of the personal property tax due over the same period (and beyond). As the taxable value of the new personal property gradually decreases, the real estate tax increases. In the earliest years of the largest tax reduction covered by TIF, the personal property tax receipts help to offset almost all the real estate tax loss to the community. The goal is to incent economic development and secure job growth for the long-term gains in a community’s quality of life: quality in terms of the size and diversity of the employment base, and quality in terms of municipal revenues to support public safety, public works, education, and other services provided by cities and towns.

² Legal authority for TIF can be found in G.L. c. 40, § 59 and 402 CMR 2.00.

The adoption of a TIF requires Town Meeting Approval. A Special Town Meeting will take place in November 2021 to consider the proposed TIF Agreement.

What is a Community Impact Assessment?

In a community impact assessment for any type of development, we focus on the *fiscal impact* of development: the relationship between the local government revenues and community service costs associated with a given land use. Fiscal impact is not the only consideration, but it is a very important one. Sometimes communities make major land use decisions based entirely on the tax impact on a proposed development or zoning change. As planners, we do not encourage this because in many cases, developments that bring little new tax revenue bring other important qualitative benefits, and they should not be overlooked. Still, we recognize that for many communities, the impact on a town's tax levy weighs heavily in the minds of local officials and residents. When a favorable impact on the tax level is paired with other positive outcomes, like job growth,

We express that relationship as a ratio of service costs to revenue, also known as a "cost-revenue ratio." Land use that generates more revenue than service costs is "revenue positive," i.e., a ratio <1.00 , or a low cost-revenue ratio. A "revenue neutral" land use represents the break-even point (1.00), and a "revenue negative" land use costs more in community services than the amount of revenue it produces (>1.00), or a high cost-revenue ratio. As such, the questions for any fiscal impact analysis are: can the proposed development generate enough revenue to pay for itself? Is it likely to have a positive or a negative impact on the tax rate?

Understanding the existing situation in a community matters because fiscal impact studies must rely on *known* demographic, land use, and municipal finance conditions to *predict the unknown* – the impact of a project not yet constructed.

A fiscal impact analyst typically begins by studying demographic trends to understand how growth and change might be affecting a community's fiscal condition. The age of its population, the makeup of its households, the types of housing that exist, where people work, and the economic position of its households all impact municipal finances. Determining the amount of general fund revenue that various land uses already generate and the community's general fund expenditures to serve those land uses is also essential. Understanding the existing situation in a community matter because fiscal impact studies must rely on known demographic, land use, and municipal finance conditions to predict the unknown – the impact of a project not yet constructed. Emphasis is placed on general fund activity because the general fund supports traditional municipal and school services. In addition, the operating and capital costs of services such as water and sewer are often (but not always) covered by user fees via an enterprise fund. These costs matter, of course, but they do not depend on the property tax levy.

We note that future community service costs projected in a fiscal impact assessment may not materialize as actual changes in spending. Our job is to estimate the impact of the Bluewater/Amazon project on municipal operations, but we do not control budget decisions

the community will make later. Sometimes communities allocate revenue growth to other municipal operations or public schools instead of the departments most directly affected by a new project. Cities and towns make appropriation decisions based on local policies and priorities, not on estimates and projections reported by a fiscal analyst.

Community impact assessments often explore matters in addition to tax base growth. In economic development, we usually look at the likelihood that a new development will bring job growth and how new jobs might contribute to the size and composition of the community's employment base. Similarly, community impact studies of housing developments look for benefits such as affordability and choice; or studies such as a recreation facilities plan will look for opportunities to improve equitable access to parks and playgrounds. In Charlton's case, we focused on the proposed development's impact on taxes and employment. Whether the new jobs created by Amazon provide employment for residents of Charlton or other towns nearby is not very important for an economic development analysis, though we recognize that some people may disagree. Jobs that increase household incomes and spending within economic regions have spinoff benefits that should never be overlooked.

We think is important for everyone in Charlton to consider that change is happening – or wants to happen! – all around them. While there is still little information to review from Census 2020, we can see where towns are gaining households, and at what pace, and we can also see how the total population is changing in terms of race, ethnicity, and age. We can also see how the market is responding to change, not only in housing starts but also in rapidly changing consumer demands for everything from on-demand transportation choices to meal delivery plans, or how new economic growth is responding to labor market dynamics. Amazon, Wayfair, and other large non-store online retailers are developing logistics facilities because of changes already occurring in household lifestyles and expectations. Southwest Worcester County is not immune from these conditions. It is worth noting that according to the Census Bureau, about 35 percent of Charlton's current households moved into their present home at some point since 2010, and 62 percent since 2000.³ In-migration brings new ideas and expectations to every city and town, along with changes in age, income, and lifestyles.

³ U.S. Census Bureau, American Community Survey (ACS) Five-Year Estimates, 2015-2019, "SE:A10031. Housing Units by Year Householder Moved Into Unit," as reported in Social Explorer (SE).

A Look at Charlton

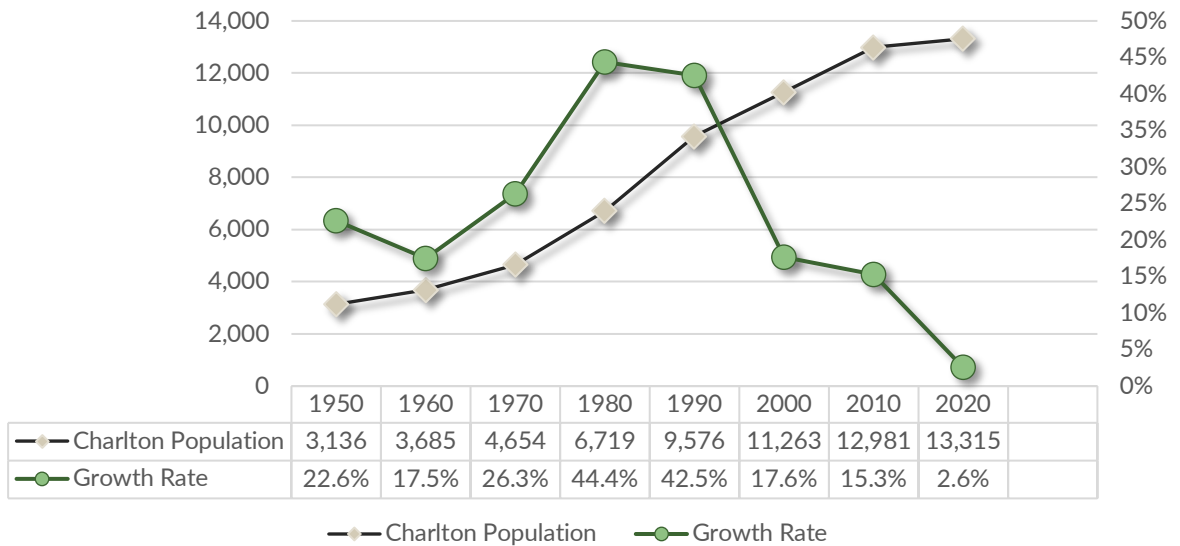
No analysis like this would be complete without putting such a large single-user industrial project in its geographic and economic context. Charlton is a small town situated in southwest Worcester County just east of the convergence of Interstate Route 90 (Massachusetts Turnpike) and Interstate Route 84. The town is laterally crossed by the Massachusetts Turnpike and a second east-west highway, U.S. Route 20, and connected to neighbors north and south along State Routes 31 and 169. Its location and highway access play a significant role in where Charlton residents work, for over half the town’s labor force commutes to employment in Worcester, neighboring Southbridge and Sturbridge, or Auburn or Webster nearby, or the town itself. Similarly, Charlton’s own employers draw primarily from within Charlton or from Worcester, Southbridge, Sturbridge, Dudley, or Webster.⁴

Population Trends

Though not a high-growth town today, Charlton experienced significant population growth during the last half of the twentieth century. Fig. 3 tracks the town’s recent growth by decade. In addition to the immediate postwar uptick in population that occurred just about everywhere, Charlton attracted a considerable increase in population in response to both the construction of and subsequent improvements to I-84 between the late 1960s and mid-1980.

Fig. 3. Charlton Population Growth: 1950 to Present

(Source: U.S. Census via Social Explorer; U-Mass Donohue Institute, State Data Center)

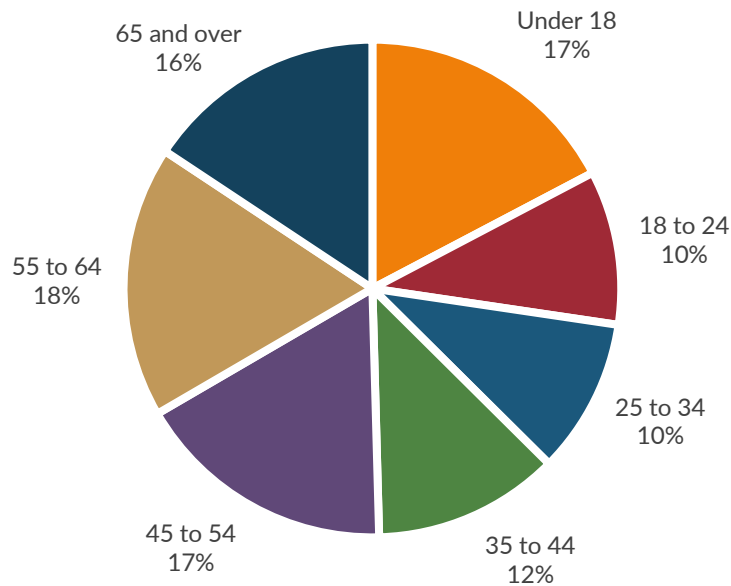


⁴ U.S. Census Bureau, American Community Survey (ACS) 2011-2015 Commuting Flows, Residence MCD/County to Workplace MCD/County Commuting Flows.

The Massachusetts Department of Transportation (MassDOT) estimates that by 2040, Charlton will be home to as many as 16,000 people. However, MassDOT also predicts that over the next twenty years, Charlton will witness significant job growth, and similar forecasts can be found for the towns around Charlton, too.

Charlton’s current population is fairly well distributed across age cohorts (Fig. 4.). Overall, its population is slightly older than that of Worcester County and its average household is slightly larger, but the differences are small. About 63 percent of the population consists of working-age people, and most people (72 percent) are members of *family* households. Approximately 30 percent of Charlton households (1,531/5,074) have dependent children under 18.

Fig. 4. Charlton Population by Age Cohort
(Source: 2019 American Community Survey 5-Year Estimates)



Charlton’s **labor force participation rate**, 69.9 percent, is about average for a small, family-oriented community. The labor force participation rate expresses the percentage of the population 16 years or over that is either employed or looking for work. The vast majority of Charlton residents have jobs in the private sector, Compared with Worcester County or the Commonwealth, a somewhat larger percentage of Charlton residents work in the Educational Services, and Health Care and Social Assistance sector, perhaps because the Town’s largest employer is the Masonic Health System, owner and operator of Overlook, a large retirement/assisted living compound located in Charlton. Charlton’s adult population is not quite as well educated as their counterparts statewide, but all the available indicators suggest

that this is changing. Among residents 25 and over, about 38 percent have a college, graduate, or professional degree (compared with 44 percent in Massachusetts), but there are more Charlton residents 18-24 years in college or graduate school today than the Census Bureau reported a decade ago.

Housing and Households

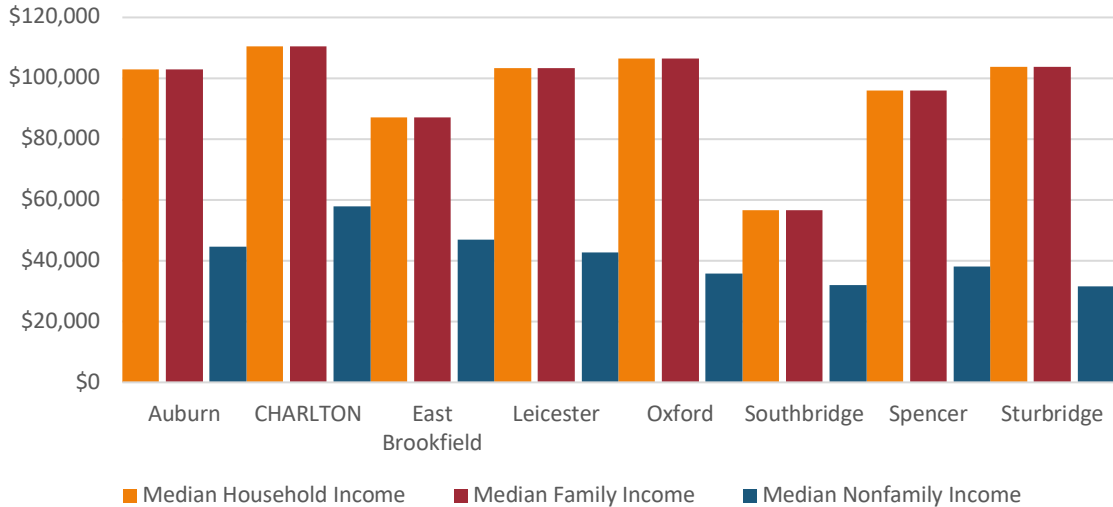
Since most of Charlton's housing stock consists of detached single-family homes, it comes as no surprise to find that most of its households (79 percent) live in owner-occupied dwellings. There is little to offer in Charlton in terms of rental housing, and this makes sense because Charlton does not have an extensive sewer network. (Multifamily developers do build in communities without sewer service, but it is almost always their last choice because providing on-site wastewater service for a development of any size is very expensive.) The existing sewer mains run along Route 20, north of I-90 around Glen Echo Lake, and in the vicinity of the Overlook and the regional vocational school. While new rental development is always a possibility in any town where multifamily investors find a good site with strong market demand, the proposed Amazon facility is very unlikely to generate rental housing demand in Charlton. On average, the wages for delivery drivers range from \$15 to \$19/hour. Weekly earnings for this group of workers are not high enough to drive up housing demand in Charlton – certainly not enough to support new growth. The higher-paid positions in robotics sortation facilities could generate some housing demand, but based on experiences elsewhere, the level of demand should be supportable with the existing pace of new residential growth in Charlton (about 30 units per year⁵) plus housing resales.

Fig. 5 (next page) illustrates that Charlton households tend to enjoy a favorable economic position relative to other communities around them. The Town's median household income – measured for all households, families, or non-families – consistently exceeds that of the surrounding towns. Just over half of all Charlton households have incomes of \$100,000 or more, and this is not the case in any of the towns around it. From available demographic data, it seems that Charlton is a “buy-up” community among towns in southwest Worcester County. It draws more incoming households than its neighbors, and when people leave Charlton, they are generally not looking for a home elsewhere in Worcester County, but either in another Massachusetts county or relocating out of state.⁶

⁵ Annual Town Report, Inspectional Services, 2020.

⁶ U.S. Census Bureau, American Community Survey (ACS) 2015-2019 Five-Year Estimates, Tables B07001, Geographical Mobility in the Past Year for Current Residence (population currently living in Charlton), and B07401, Geographical Mobility in the Past for Residence 1 Year Ago (population living in Charlton a year ago). Geographical mobility measures the amount of movement into and out of a community.

**Fig. 5. Median Income Profile:
Households, Families, and Nonfamilies**
(2019 ACS Five-Year Estimates)



Local Employment Base

The most recent data available for employment and wages at the local level indicate that Charlton has approximately 370 **employer establishments**. An employer establishment is a for-profit, non-profit, or governmental entity that has payroll employees. It excludes self-employed individuals, and it also excludes a few institutional employers that are not required by law to provide unemployment compensation insurance. Nevertheless, the jobs supported by employer establishments represent the vast majority of jobs in a city or town, and the database that contains all of this information is an important resource for understanding the size and structure of a community’s economy.

By far, Charlton’s largest industry is Health Care and Social Assistance, and Overlook has a great deal to do with this. The Town also has a smaller assisted living residence, the Charlton Manor Rest Home on Town Farm Road, so together, these facilities provide a large share of the jobs in Charlton: over 20 percent. However, the highest-paying jobs in Charlton represent a much smaller share of the employment base. For example, Information is Charlton’s highest-paying sector, but it provides only 1.4 percent of all local jobs. The other high-wage jobs exist in industries such as utilities (2.6 percent), heavy and civil engineering construction (1.6 percent), and real estate (less than 1 percent). It is little wonder that most people with jobs in Charlton live outside the town, they commute primarily from Southbridge, Worcester, Sturbridge, and Dudley. Charlton does keep a fair number of its own residents in town every day, and while most work for a local employer establishment, about 6 percent of Charlton residents work from home, typically in professional services, arts and recreation, or health care.

The Fiscal Impact Models

Proportional Valuation Method

When we prepare a fiscal impact analysis of a new nonresidential project, we often work with an average cost model that assumes, directly or inferentially, the existence of a proportional relationship between the assessed value of a land use and its associated community service costs, i.e., the *proportional valuation method*.⁷ This approach adopts the premise that the reasonably predictable “known” of assessed valuation can be used as a platform for estimating the less “known” of land use-generated costs. Like many other fiscal impact methods, proportional valuation accepts the idea that current municipal and school service costs are a valid basis for estimating future spending – that is, a community’s experience today is a reasonable predictor of its average experience tomorrow. The model involves a two-step process: first, estimating what the community spends to serve its commercial and industrial taxpayers today, and second, what the community will likely spend to serve the new development, using the existing condition as a guide.

Refinement coefficients adjust for the size and value of new nonresidential development relative to the existing tax base. Without the coefficients, the actual impact of a new project could be exaggerated or significantly underestimated.

The assumptions embedded in a proportional valuation study have to be reviewed carefully in cases where there is no local precedent for a proposed development – especially a large one. Applying current cost-revenue relationships to a new commercial or industrial facility can severely exaggerate the associated future costs because the assessed value of new nonresidential development is often much higher per sq. ft. than that of established nonresidential land uses. Accordingly, the proper way to apply proportional valuation involves applying *refinement coefficients* to adjust for the size and value of new nonresidential development. In our experience, the coefficients provide a reasonably accurate estimate of commercial development service costs

and we have used them for analysis of the proposed Amazon Robotics Sortation Center. We also compared the results against our own database of past projects to determine if the costs are in range for actual existing nonresidential uses we have studied in the past. In addition, we conducted a literature search to locate some independent reports.

Employment Anticipation Method

For Charlton, we decided to check the results of the proportional valuation study by applying a second model, *employment anticipation costs*. This approach is also an average cost model, but

⁷ Burchell & Listokin, *The Fiscal Impact Handbook* (Routledge, 1978, 2012).

its assumptions are a bit different. For an employment anticipation cost analysis, we begin by analyzing the community's current cost to serve existing nonresidential development – using the first step in proportional valuation described above. That cost is then divided by the community's existing employment base to arrive at an average cost of nonresidential services per local worker. The average cost per worker can then be multiplied by the number of jobs the proposed facility is expected to create in order to arrive at an estimate of new expenditures for municipal services.

The average cost per worker in the community's existing employment base can be used as an indicator of the cost to serve additions to the employment base.

In both cases – proportional valuation and employment anticipation costs – the results need to be interpreted as “order of magnitude” projections because the community's actual cost of services could run a bit higher or lower. In our experience, there is usually very little disagreement about how much new revenue a project will bring the community, but there can be quite a bit of disagreement about what the new service costs will be. An advantage to using these “average cost” models is that they tend to produce high-side service cost estimates, which means the results are generally conservative.

Before digging too deeply into local finance data, we always look first at the community's existing development pattern and land use mix for a comparable project. However, Charlton does not have a large warehouse/distribution facility like Amazon's sortation center. In situations like this, we have to research projects elsewhere that have enough similarity to serve as useful examples or case studies. We started by surveying industrial warehouse compounds in Worcester County. While there are a few large projects that can provide some perspective for Charlton, there is nothing directly “comparable” to the proposed multi-story, specialized logistics center. What can be said about the Worcester County's outlying industrial submarket – the area that includes Charlton – is that logistics facilities are the primary driver of new industrial development today. What is happening in Charlton, both with the Amazon project and another proposed warehouse/distribution project nearby, is part of a larger regional market trend. CoStar reports very low vacancy rates and significant rent growth for logistics facilities in Outlying Worcester County, and new projects under construction that are much larger than the existing inventory of space. A 600,000 sq. ft. distribution center under construction in Uxbridge exemplifies this trend. Though clearly smaller than Amazon's in Charlton, the Uxbridge facility will be a very large project relative to the rest of southern Worcester County. Its closest comps all lie along and to the east of Interstate Route 495.

Considering this, we opted to draw on research we prepared 15 months ago in connection with a proposed Amazon logistics center in Hudson, N.H.⁸ The Hudson project is not a

⁸ In Hudson's case, the developer was Hillwood, not Bluewater. To the best of our knowledge, there is no connection between these two firms.

robotics-assisted facility, but it is approximately the same size in sq. ft. as Charlton's. Not far from Hudson is what can best be described as a compound of large distribution facilities located south of the Manchester airport on Pettengill Road, with access to two regional highways, Interstate Route 93 and U.S. Route 3. The findings from that research provide useful insights, so we have integrated relevant information from that work.

Potential Impact on Charlton Town Departments

Our review of this project included consultation with the Town Administrator, Town Planner, Police Chief, Fire Chief, and Public Works Director. The latter three operations are especially important because of all municipal services, they are most likely to feel the effects of Amazon's project. We did not consult with the Inspectional Services Department or Assessor but based on our review of their annual reports and budgets, we can reasonably predict how the Amazon facility will affect them.

Police Department. The Charlton Police Department is a small police force with 20+ uniformed officers, along with the Chief and Police Lieutenant. Town records show that in 2020, the Police Department answered about 26,000 calls, issued 1,045 motor vehicle citations, and responded to 324 accidents.⁹ When we interviewed Town staff in August 2021, Police Chief Daniel Dowd raised concerns about the department's ability to absorb demands from the additional traffic Amazon's project will generate on Routes 20 and 131. While the Chief's concerns about growth in truck traffic have merit, what we heard from municipal staff in Londonderry, N.H. is that after the large distribution centers opened on Pettengill Road, the most observable change involved minor collisions involving employees commuting to and from work. The truck traffic per se, while noticeable, was not the main cause of an uptick in police activity in that part of town. We note that Londonderry's police department is twice the size of Charlton's.

Fire Department. The Charlton Fire Department is staffed by the Chief, Deputy Chief, 20 full-time firefighter/EMT's, and a Fire Prevention Officer, as well as eight on-call personnel. Charlton has two fire stations, including the headquarters facility on Power Station Road and a second, unstaffed station on North Main Street. Fire Department personnel respond to approximately 2,600 calls per year,¹⁰ primarily emergency medical calls (as is the case with most municipal fire departments today). Warehouses can present unique and very challenging problems for fire departments, both in terms of the performance of fire suppression systems and the demands on firefighters responding to a warehouse fire. In older warehouses, fires can rapidly develop because the building layouts can facilitate fire spread. Still, the types of fire suppression/sprinkler systems installed in new warehouses today, as well as more well-planned, fire-preventive aisle layouts and sprinkler locations have helped to significantly reduce the risk of fire.

⁹ Annual Town Report, 2020.

¹⁰ Annual Town Report, 2019, 2020.

From our research, we do not think the proposed facility will place many firefighting demands on Charlton insofar as capacity of personnel is concerned. There will be a modest uptick in EMS calls associated with vehicle collisions and possibly employee medical emergencies. We recognize that Charlton's community partnership agreement with Amazon includes resources for Fire Department equipment and programs, so fortunately, the Town will not be pressed to commit new operating revenues from this project to meet capital needs in the Fire Department. If anything, we anticipate that most of the new demand Amazon places on the Charlton Fire Department will involve plan review, permits, and inspections.

Inspectional Services. Amazon's project will almost certainly place new demands on inspectional services staff. The issue is not only the time required for initial construction plan review and inspections during construction. In our experience, commercial and industrial projects involve frequent interior changes that trigger building, electrical, and other permit and code inspection requirements. Considering the sheer size of the proposed development, Charlton should anticipate demands on building and electrical inspections staff long after this project is built and occupied. Tenant fit-ups, adjustments, interior space alterations, installation of new technology, and a variety of related activities occur pretty routinely with nonresidential development. The capacity the Town needs to respond to these additional demands should be accounted for in the fiscal impact analysis.

Public Works. When we met with Town staff, Public Works Director Gerry Foskett said his main concern is the additional expense of road maintenance due to the significant increase in truck traffic expected from Amazon's project.

There will be ancillary impacts, too. For example, the Assessing Department may need to purchase specialized outside services or modify their existing agreement with Patriot Properties to determine the market value of the property once the Robotics Sortation Facility is completed. The information required to set the value is not the sort of data that city and town assessors have ready access to, so the need for (and expense of) outside professional services should be recognized. That need may not be limited to a single year of occupancy at the new facility. The Town Assessor and other administration and finance functions tend to be overlooked in fiscal impact studies because much of their work is invisible to the general public, but these offices and departments function as a scaffold for the community's direct service operations.

Sometimes employees of local businesses use other municipal services, too. Local public libraries and recreation facilities occasionally serve nonresidents who work in the community,

Model Results: Projected Costs and Revenues

The tables on the following pages present the proportional valuation analysis and employment anticipation study. Table 1, the proportional valuation study, illustrates, step-by-

step, how we arrived at the estimated “higher” cost of services per year, \$488,800. The allocation of those dollars to various municipal service categories is a judgment call, and it is far less formulaic than the process used to arrive at the total. We assigned the vast majority of the cost estimate to public safety. Between our conversation with Town staff, our independent research, and our experience convince us that the project’s impact on public safety will be the most important, long-term impact on the Town.

Table 1. Proportional Valuation Analysis (FY 21 Dollars)¹¹

	Input	Result
A	Municipal Operating Budget	\$30,656,800
B	Non-Residential Real Property Value	\$176,743,700
C	Total Real Property Assessed Value	\$1,563,981,200
D	Ratio (C / B)	0.113
E	Non-Residential Parcels	272
F	Total Parcels	6,156
G	Average Value: Non-Residential Parcel (B / E)	\$649,800
H	Average Value: All Parcels (C / F)	\$254,100
I	Ratio (G / H)	2.56
J	Refinement Coefficient	0.565
K	Non-Residential Expenditures (A * D * J)	\$934,600
L	Residential Expenditures (A - K)	\$29,722,200
	<i>Estimated Expenditure by Function for Nonresidential Development</i>	
M	Public Safety (Police, Fire, EMS, Inspections) 45%	\$420,600
N	Public Works (Roads, Drainage, Equipment Maintenance) 30%	\$233,600
O	Other (Admin & Finance, Other Services) 25%	<u>\$280,400</u>
P	Total (K)	\$934,600
	Impact of Proposed Facility	
Q	Estimated Assessed Value (Town)	\$215,000,000
R	Ratio, New Value to Total Existing Nonresidential Value (Q / B)	1.22
S	Ratio, New Value to Existing Average Nonresidential Value (Q / G)	330.87
T	Refinement Coefficient	0.43
U	Increased Cost of Services (P * R* T)	\$488,800
	<i>Estimated Expenditure by Function for Proposed Facility*</i>	
W	Public Safety (Police, Fire, EMS, Inspections) 65%	\$317,700
X	Public Works (Roads, Drainage, Equipment Maintenance) 23%	\$112,400
Y	Other (Admin & Finance, Other Services) 12%	\$58,700

Note: numbers may not total due to rounding.

¹¹ Sources: Town of Charlton, Massachusetts Department of Revenue, Municipal Data Bank, and Burchell & Listokin, *The Fiscal Impact Handbook* (Routledge, 1978, 2012).

Table 2. Employment Anticipation Service Cost Analysis¹²

	Input (Method 1)	Result
A	Existing Employment Base (Total Employment, 2020)	3,681
B	Existing Nonresidential Expenditures (from Table 1)	\$934,600
C	Average Cost per Existing Worker (B / A; rounded)	\$300.00
D	Facility Size	2,855,000
E	Average Permanent Jobs/10,000 sq. ft.	1.953
F	Estimated Permanent Jobs	1,462
G	Direct Multiplier	0.738
H	Direct Jobs (F * G)	1,079
I	Indirect/Induced Jobs (F - H)	383
J	Estimated Cost of Services, New Employment (F * C)	\$438,600

Note: numbers may not total due to rounding.

¹² Sources: Massachusetts Executive Office of Labor and Workforce Development, Employment and Wages ES-202, Calendar 2020; U.S. Bureau of Economic Analysis (BEA) Regional Input/Output Multipliers.