REEXAMINING ZONING IN CONNECTICUT: COMMERCE, INDUSTRY, AND SERVICES

Function, Compatibility, and Comprehensive Planning in a Changing Economy

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I. Abstract

Connecticut's zoning framework continues to rely on categorical distinctions among residential, commercial, and industrial land uses that were developed for a very different economic era. Over the past seventy-five years, both industry and commerce have changed fundamentally: what manufacturing has remained has become cleaner, quieter, and smaller in scale, while retail and service activity has become increasingly logistics-, processing-, and traffic-intensive. In part, this trend reflects the outsourcing of more labor-intensive work to overseas locations. Yet zoning classifications have not kept pace with these shifts.

As a result, many uses that are functionally industrial or service-industrial in nature are routinely classified as commercial, often for historical or superficial reasons rather than pragmatic ones. This misalignment obscures the true economic role of land, complicates transportation and infrastructure planning, weakens long-term economic resilience, and can undermine the core zoning objective of ensuring compatible land uses.

This paper examines the convergence of industrial and commercial activity, explains how misclassification emerged and why it matters, reviews modern land-use impacts using traffic and environmental metrics, and presents service-industrial zoning as a practical, Connecticut-tested planning tool. The paper situates these issues within the current statutory environment. Its purpose is to support accurate, impact-based zoning that enables comprehensive planning and preserves the full range of land uses—housing, commerce, services, and production—that healthy communities require.

II. Introduction

Land-use zoning is among the most consequential responsibilities exercised by local governments. Through zoning regulations, municipalities shape development patterns, economic opportunity, environmental outcomes, and long-term fiscal stability. For much of the twentieth century, zoning relied on relatively simple distinctions: residential uses were separated from commercial activity, and both were separated from industrial production.

Those distinctions reflected the economic realities of their time. Heavy manufacturing generated noise, pollution, and truck traffic, and required significant energy and transportation infrastructure. Retail activity was largely storefront-based and locally oriented. Separating these uses was a rational response to genuine incompatibilities.

In the current post-industrial economy, these underlying assumptions no longer hold. Manufacturing has largely shed the historical image of mills and smokestacks, while many commercial uses generate significant traffic, noise, and environmental impacts. Service businesses increasingly integrate fabrication, storage, distribution, and processing functions. As economic activity has converged, zoning classifications have remained largely static.

For planning and zoning commissions, these changes are not abstract. They affect how zoning maps are interpreted, how applications are reviewed, and how long-standing economic functions are either preserved or unintentionally displaced. On a broader scale, they affect how long-term land use planning is performed at the local, regional, and state levels. This paper is intended to support that decision-making by providing a clearer framework for understanding modern industrial and service-industrial activity and its implications for zoning practice. The goal is not to elevate industrial uses over commercial ones, but to ensure that zoning classifications reflect real-world function and impact.

III. The Convergence of Industrial and Commercial Activity

Seventy-Five Years of Economic Change

Over the past seventy-five years, the structure of the American—and Connecticut—economy has changed profoundly. As global trade allowed traditional smokestack industries that once dominated industrial districts to concentrate in cheaper labor markets, they were replaced by forms of production that are far less polluting, more automated, and far more space-efficient. Modern manufacturing frequently involves precision fabrication, small-batch production, advanced materials, or specialized assembly rather than heavy industrial processing.

At the same time, the organization of commerce has changed just as dramatically. Retail activity has shifted away from purely storefront-based models toward logistics- and distribution-oriented systems driven by e-commerce, just-in-time delivery, and vertically integrated supply chains. Many businesses that appear outwardly "commercial" now depend on warehousing, on-site processing, fabrication, or assembly as an integral part of their operations.

These parallel transformations have eroded the once-clear functional boundary between industrial and commercial land uses. Yet zoning frameworks—many of which date to the mid-twentieth century—continue to rely on categorical distinctions that assume industry and commerce are inherently incompatible.

The Integration of Production and Retail

Today, the integration of manufacturing and retail activity is not exceptional. Breweries routinely operate as brewpubs, combining production and retail service on the same premises. Bakeries and food producers often manufacture products on site that are sold directly to customers. Bookstores increasingly incorporate on-demand printing services. Artisans, woodworkers, metal fabricators, and specialty manufacturers frequently maintain showrooms or limited retail space alongside production areas. Table 1 summarizes numerous examples of how production and retail have been integrated across the United States.

This pattern is not new in concept, but the ease and prevalence of vertical integration has increased markedly due to automation, compact machinery, and digital production techniques. What once required large, single-purpose industrial facilities can now occur within modest buildings that are visually and operationally indistinguishable from conventional commercial structures.

As a result, the traditional zoning assumption—that retail and manufacturing are incompatible uses—no longer holds in many contexts.[1] In practice, a growing number of municipalities already permit such integration through mixed-use districts, flexible business zones, or ad hoc allowances within commercial districts.

Connecticut Zoning Practice in Context

Connecticut's zoning practice reflects this convergence, albeit inconsistently. Since zoning was upheld by the U.S. Supreme Court in 1926, 167 municipalities in Connecticut have adopted zoning regulations. Today, manufacturing is permitted in approximately 280 zones across 144 municipalities, averaging nearly two zones per municipality where some form of manufacturing is allowed.

At the same time, 23 municipalities—predominantly rural or suburban in character—exclude industry entirely from their zoning regulations, accounting for roughly 85 percent of municipalities without any industrial zoning. Even in communities that permit manufacturing, it is common for industrial and service-industrial uses to be embedded within commercial or business districts rather than clearly designated as such.

This pattern reflects not a rejection of production or skilled trades, but a gradual adaptation to public perception and market realities. Municipalities often sought to accommodate clean, low-impact production while avoiding the label "industrial." Over time, this approach normalized the treatment of industrial function as commercial by default.

Implications for Zoning Classification

The convergence of industrial and commercial activity raises fundamental questions for zoning commissions. If businesses routinely combine fabrication, storage, distribution, office, and retail functions within a single operation, rigid categorical distinctions become increasingly difficult to

[1] The exceptions to this trend are the large multi-national corporations that manufacture automobiles and related transportation and farming equipment which are not produced through boutique manufacturing processes. Yet large scale manufacturing industries are the exception to the rule. In Connecticut, 83% of the state's manufacturing firms employ less than 100 employees according to the Connecticut Business and Industry Association's 2024 Manufacturing Report, p.4.

defend. Efforts to distinguish "primary" from "accessory" uses—once a workable solution—have grown less meaningful as vertical integration becomes the norm rather than the exception.

In this context, zoning that relies on outdated assumptions risks mischaracterizing land use, understating impacts, and obscuring economic function. Recognizing the convergence of industrial and commercial activity is therefore a necessary first step toward zoning that reflects contemporary economic reality and supports coherent, long-term planning.

The growing convergence of industrial and commercial activity has not occurred in a vacuum. Municipal zoning regulations have adapted to these changes unevenly, often through incremental adjustments rather than comprehensive rethinking. In many cases, this adaptation has taken the form of reclassification rather than reevaluation: industrial and service-industrial functions have been absorbed into commercial zoning districts without a corresponding reassessment of whether those districts are well suited to host them. The result is a pattern of misclassification that now warrants closer scrutiny.

IV. How Misclassification Became Embedded in Zoning Practice

Perception, Politics, and the Avoidance of "Industrial" Zoning

The misclassification of industrial and service-industrial uses as commercial did not arise from a single policy choice. Rather, it emerged gradually from a combination of economic forces, public perception, and local political dynamics.

Throughout much of the twentieth century, "industrial" zoning was associated with heavy manufacturing, environmental degradation, and large labor forces—land uses that were widely viewed as incompatible with residential and civic life. Even as industrial practices evolved and industrial employment sharply declined, the label itself retained negative connotations.[2] In contrast, "commercial" zoning came to be associated with offices, retail, and services perceived as cleaner, quieter, and more desirable—even when those uses generated significant traffic or other impacts.

Faced with these perceptions, many municipalities sought to accommodate modern production and skilled trades without explicitly zoning land as industrial. Fabrication, processing, contractor operations, printing, food production, and similar activities were permitted within commercial or business districts, often alongside offices and retail uses. Over time, this approach allowed communities to host productive economic activity while avoiding the political sensitivity associated with industrial zoning.

Incremental Accommodation and Its Long-Term Effects

What began as pragmatic accommodation became embedded zoning practice. As new uses were added to commercial districts and existing industrial districts were rezoned or repurposed, zoning maps gradually lost their ability to clearly distinguish between land intended for employment and production and land intended primarily for consumer-oriented activity. There has been a long-term decline in the number of industries and the percentage of employment in the manufacturing sector in the United States over the period between 1939 and the present (see Table 0). Similar trends have also taken place in Connecticut, resulting in the departure of many heavy industries that were economically better aligned with lower cost labor or access to mineral resources. Simultaneously, labor requirements for

[2] See Appendix 1 for the long-term decline in industrial employment as a percent of total employment in the United States.

industrial production have been dramatically reduced through mechanization, automation, and computer aided efficiencies at all levels of manufacturing processes.

This incremental approach produced several lasting effects:

- Industrial function became invisible in zoning maps and regulatory language, even where production activity was widespread.[3]
- Commercial districts expanded in scope, often becoming catch-all zones for uses that did not fit neatly elsewhere.
- Planning assumptions shifted, with commercial land increasingly viewed as flexible or transitional rather than as a category with its own distinct role.

In many municipalities, this evolution occurred without an explicit policy decision to de-emphasize industry. Instead, it reflected a series of case-by-case judgments that, over time, reshaped the meaning of commercial zoning.[4]

Cumulative Versus Non-Cumulative Zoning Structures

The misclassification problem is further compounded by the structure of zoning districts themselves. In cumulative zoning systems, lower-intensity uses are permitted in higher-intensity zones, allowing commercial uses to locate in industrial districts as-of-right or by special permit. While this approach offers flexibility, it also weakens the ability of zoning maps to communicate intent.

Non-cumulative zoning—where districts are defined by distinct and mutually exclusive use categories—can provide greater clarity, but only if the underlying classifications are accurate. When industrial and service-industrial uses are assigned to commercial districts in non-cumulative systems, the result is not flexibility but confusion: land that functions as employment or production space is regulated as if it were consumer-oriented commercial land. At the same time, dedicated industrial zones can become largely vacant as older industries are shuttered and otherwise viable new uses are excluded by outdated regulations.

In both cases, the issue is not cumulative zoning per se, but the absence of a clear conceptual framework for distinguishing between commercial activity oriented toward customer turnover and industrial or service-industrial activity oriented toward production, fabrication, storage, or skilled trades.

Planning Consequences of Misclassification

The consequences of misclassification extend beyond semantics. When industrial and service-industrial functions are embedded within commercial zoning districts, municipalities may experience:

- Distorted transportation planning, as trip-generation assumptions associated with commercial uses fail to reflect actual operations;

[3] This can be seen in the wide range of zones that fail to include the word "industry" in their title yet contain lists of numerous permitted industrial uses. In Connecticut, industrial uses can be found in zones called Business Parks, Corporate Business Parks, Technology Parks, Design Enterprise Districts, and Economic Development Districts.

[4] It is noteworthy that only three municipalities in Connecticut have zones titled Heavy Industry (Bridgeport, Durham, and Norwalk), a category of industrial development no longer reflecting current trends in industrial uses in Connecticut.

- Reduced predictability for businesses, particularly those requiring long-term investment in equipment or facilities;
- Incremental erosion of employment land, as areas zoned commercial are viewed as appropriate for conversion to other uses without deliberate planning choice; and
- Weakened comprehensive planning, as zoning maps no longer accurately represent the intended economic structure of the community.

Again, these outcomes are often unintended. They arise not from hostility toward industry, but from zoning systems that have not been recalibrated to reflect contemporary economic reality.

The Need for Intentional Reclassification

Addressing misclassification does not require returning to older models of industrial zoning, nor does it imply privileging production over other community needs. Instead, it calls for intentionality: a conscious effort to align zoning labels, permitted uses, and performance standards with how land is used and how impacts are generated today.

By acknowledging how misclassification became embedded in zoning practice, planning and zoning commissions are better positioned to revisit their land-use frameworks thoughtfully. Doing so sets the stage for impact-based regulation, service-industrial zoning, and more coherent long-term planning—topics taken up in the sections that follow.

V. Comparing Land-Use Impacts: Industry and Commerce Today

Rethinking Assumptions About Intensity and Compatibility

Zoning practice has long relied on a shorthand hierarchy of land uses in which industrial activity is presumed to be more intensive, disruptive, and incompatible with surrounding development than commercial or service uses. This hierarchy shaped much of twentieth-century zoning and continues to inform contemporary regulatory decisions.

In many cases, however, these assumptions no longer align with how impacts are actually generated. The intensity of a land use is not determined by whether an activity is labeled "industrial" or "commercial," but by measurable characteristics such as traffic generation, hours of operation, noise, emissions, lighting, and the extent of outdoor activity. When these factors are examined directly, modern industrial and service-industrial uses often compare favorably to many uses that are widely permitted in commercial districts.

Traffic Generation and Transportation Impacts

Transportation impacts provide one of the clearest illustrations of this disconnect. Empirical trip-generation data consistently show that many retail and service uses—particularly those characterized by rapid customer turnover—generate significantly more vehicle trips per square foot than light industrial or manufacturing uses. Table 3 reveals the dramatic differences between commercial and industrial trip generation rates as identified by the ITE Trip Generation Manual.

Drive-Thru restaurants, convenience retail, and quick-service food establishments can produce continuous vehicle circulation throughout the day, with pronounced peak-hour congestion and frequent idling. These effects are often concentrated on local roads and arterials already under strain, and they can exacerbate safety concerns for pedestrians and cyclists.

By contrast, many industrial and service-industrial operations employ a limited workforce, operate on fixed schedules, and generate predictable traffic patterns largely confined to shift changes. Freight activity is often periodic rather than constant, and customer traffic is minimal or nonexistent. From a transportation planning perspective, such uses are frequently easier to accommodate than high-turnover commercial activity.

Noise, Lighting, and Operational Characteristics

Operational impacts further complicate the conventional zoning hierarchy. Modern light manufacturing and service-industrial uses typically occur indoors, with limited outdoor activity and controllable noise sources. Advances in building design, equipment, and process control have reduced off-site impacts to levels that are often indistinguishable from those associated with offices or research facilities.[5]

In contrast, certain commercial uses—particularly those with extended hours of operation—can generate persistent noise from vehicle movements, outdoor queuing, loading activity, and mechanical systems. Drive-Thru facilities, late-night retail, and entertainment-oriented uses may introduce lighting and activity levels that are difficult to mitigate in proximity to residential areas.

These impacts are not inherent to commerce, nor are they universal. They do, however, underscore the limitations of zoning frameworks that assume compatibility based on use category rather than operational reality.

Environmental Considerations

Environmental impacts are similarly nuanced. Many modern industrial and service-industrial uses do not require air or wastewater permits, do not involve hazardous materials in meaningful quantities, and operate entirely within enclosed buildings. Where impacts exist, they are typically addressed through existing state and federal regulatory programs that operate independently of zoning.

Certain commercial uses, by contrast, can contribute disproportionately to localized environmental impacts. Vehicle-intensive activity increases emissions from idling and congestion. Large paved areas associated with parking and circulation contribute to stormwater runoff, non-point-source pollution, and heat-island effects. Extended lighting can affect nearby residential areas and ecological resources.

From an environmental perspective, it is increasingly difficult to justify a regulatory framework that treats industrial activity as presumptively harmful while overlooking the cumulative impacts of some commercial uses.

Fiscal Performance and Public Service Demand

Land-use impacts extend beyond physical and environmental considerations to include fiscal performance and demand for public services. Modern industrial and service-industrial uses often support skilled employment with higher-than-average wages, contributing to household stability and local purchasing power.

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[5] Despite the wide range of commercial uses that generate noise, zoning commissions in Connecticut continue to treat industrial zones as potentially more noise producing than commercial zones. In 2025, there were 34 industrial zones in Connecticut that addressed noise reduction as a fundamental purpose of the zone. In contrast, only 22 business and commercial districts addressed noise reduction within the stated purpose of the zone.

These uses may also contribute to the municipal tax base through taxable machinery, equipment, and personal property—revenues that are not typically generated by retail or office uses. At the same time, with the exception of regional scale truck terminals and regional distribution centers, industrial operations frequently impose relatively modest demands on municipal services, particularly when compared to high-traffic commercial uses that require ongoing investments in roadway capacity, traffic control, and public safety.

While fiscal outcomes vary by use and location, the assumption that commercial development is inherently more beneficial to municipal finances than industrial development is increasingly difficult to sustain.

Compatibility as an Outcome, Not a Label

Taken together, these considerations suggest that compatibility is best understood as an outcome of measurable impacts rather than a function of zoning labels. Modern industrial and service-industrial uses often exhibit characteristics—predictable traffic, limited noise, contained operations, and durable employment—that are highly compatible with surrounding land uses.

Conversely, some commercial uses generate levels of activity and external impact that challenge compatibility, particularly in proximity to residential neighborhoods.

A zoning framework that fails to account for these realities risks privileging form over function. By grounding regulatory decisions in actual impacts rather than inherited assumptions, planning and zoning commissions can better align zoning practice with contemporary economic conditions and community objectives.[6]

VI. Industrial and Service-Industrial Land as Economic Infrastructure

Beyond Parcels: Industrial Land as a System Asset

Industrial and service-industrial land performs a role that extends well beyond the boundaries of individual parcels or developments. Such land supports production, skilled trades, logistics, maintenance, fabrication, and repair—activities that are foundational to the functioning of local and regional economies. In this sense, industrial land operates as economic infrastructure, analogous to transportation networks, utilities, or institutional land.

Unlike many commercial uses that are primarily consumer-facing and interchangeable across locations, industrial and service-industrial uses are often tightly linked to physical space, access to transportation networks, and proximity to suppliers, customers, and labor. Their location decisions are shaped not only by market demand, but by zoning stability, "just in time" inventory management with supplier partnerships, and long-term predictability.

When zoning frameworks fail to recognize this role, industrial land may be treated as an undesirable land use category—available for conversion whenever market pressures favor alternative uses—rather than as a strategic asset that warrants deliberate planning.

[6] For example, both Middletown and Brookfield Planning and Zoning Commissions have traffic impact regulations which can serve as models for performance-based assessments of new development.

Irreversibility and the Challenge of Reassembly

One of the defining characteristics of industrial land is its irreversibility once lost. When large parcels suitable for production or service-industrial activity are converted to incompatible uses, they are rarely recovered. Fragmentation, rising land values, adjacency conflicts, and changes in infrastructure capacity make reassembly difficult if not impossible.

This is particularly true in built-out or suburban municipalities, where industrial land tends to be limited in extent and scattered in location. Incremental conversions—often justified individually as reasonable or modest—can cumulatively erode the land base needed to support employment and service functions.[7]

Misclassification exacerbates this problem. Where industrial and service-industrial activity takes place in commercial zoning districts rather than dedicated industrial zones, the loss of crucial industrial space may be obscured through incremental change. Over time, municipalities may find that they have preserved the appearance of economic diversity while losing significant underlying capacity.

Regional Effects and Spillover Impacts

The consequences of losing industrial and service-industrial land are not confined to individual municipalities. Employment land shortages can generate regional spillover effects, including longer commute distances, increased freight travel, and displacement of production activity to less suitable or more remote locations.

These outcomes can undermine regional transportation goals, increase greenhouse gas emissions, and strain infrastructure systems that were not designed to accommodate dispersed industrial activity. From a regional planning perspective, the preservation and appropriate siting of industrial and service-industrial land is therefore not merely a local concern, but a shared responsibility.

Recognizing industrial land as economic infrastructure can help align municipal zoning decisions with broader regional objectives related to mobility, sustainability, and economic resilience.

Employment Quality and Economic Resilience

Industrial and service-industrial uses play a distinct role in supporting middle-income employment and skilled trades. These uses often provide jobs that do not require advanced academic credentials but offer stable wages, benefits, and opportunities for advancement. They contribute to economic resilience by diversifying the employment base and reducing dependence on consumer spending alone.

Zoning that inadvertently discourages such uses can narrow the range of employment opportunities available within a community, with downstream effects on workforce participation, commuting patterns, and housing demand.

From a comprehensive planning standpoint, preserving land for production and service-industrial activity is therefore closely tied to goals related to workforce development, economic equity, and long-term community stability.

[7] For example, a 2025 WestCOG analysis of industrial zones in Connecticut found 15 municipalities that allow either single family residences and/or multi-family development in their industrial zones.

Planning for Function, Not Just Market Demand

Market demand alone does not ensure that sufficient land remains available for industrial and service-industrial uses. Residential and high-turnover commercial uses often outcompete production uses in the short term, particularly in locations with strong real estate markets. Without intentional zoning, industrial land can be displaced not because it is incompatible or without value, but because it is undervalued in conventional market terms.

Recognizing industrial and service-industrial land as economic infrastructure provides a framework for resisting purely market-driven conversion and instead making land-use decisions grounded in long-term planning objectives. This does not require freezing land in perpetuity or prohibiting change, but it does require clarity of purpose.

By explicitly identifying, classifying, and planning for industrial and service-industrial land, municipalities can better balance immediate development pressures with the enduring need for employment, services, and production capacity. Planning should not merely allocate land for a range of uses. It should also prioritize the economic and employment benefits created by the industrial and service industry sectors. The industrial sector creates jobs—an essential function enabled by zoning as well.

VII. Service-Industrial Zoning as a Planning Tool

The Rationale for a Distinct Service-Industrial Category

As industrial and commercial activities have converged, many municipalities have attempted to manage this change by expanding the list of permitted uses within commercial districts. While this approach offers short-term flexibility, it does not resolve the underlying planning challenge: commercial zoning increasingly functions as a catch-all category for uses that do not neatly fit elsewhere—or often do not fit well with each other.

Service-industrial zoning provides an alternative approach. Rather than treating industrial and service-industrial activity as a subset of commercial use, it recognizes production, fabrication, logistics, and skilled trades as distinct land-use functions with their own compatibility characteristics, infrastructure needs, and planning implications.

The purpose of a Service Industrial Zone is not to recreate traditional heavy industrial districts, nor to exclude modern commercial activity entirely. Instead, it is to create a zoning framework that accommodates low-impact industrial and service activity while maintaining clarity of intent and protecting land needed for employment and production.

Defining Service-Industrial Uses

Service Industrial Zones typically permit a broad range of uses that fall between traditional industrial and commercial categories, including:

- Light manufacturing and assembly.
- Contractor operations and skilled trades.
- Small scale warehousing and distribution without significant retail or truck traffic.
- Research, testing, and technical services.
- Printing, food production, and specialty fabrication; and
- Offices and support functions directly related to production or service activity.

Limited accessory retail or customer-facing space may be permitted where it is incidental to the primary operation, but high-turnover retail and residential uses are generally excluded. This distinction is critical: the intent of service-industrial zoning is to preserve land for employment-oriented uses, not to create a mixed-use district by default.

Non-Cumulative Zoning and Clarity of Intent

A defining feature of effective service-industrial zoning is its non-cumulative structure. In non-cumulative zones, permitted uses are defined by purpose and impact rather than by a hierarchy of intensity. This approach avoids the assumption—embedded in cumulative zoning systems—that lower-intensity uses are appropriate wherever higher-intensity uses are allowed.

Non-cumulative service-industrial zoning offers several advantages. Specifically, it:

- Communicates clear planning intent to property owners, neighbors, and investors.
- Reduces ambiguity about long-term land use expectations.
- Protects employment land from incremental conversion driven by market pressure rather than planning choice; and
- Allows municipalities to tailor performance standards to actual impacts.

Non-cumulative zoning is a key factor in preserving industrial and service-industrial function over time. Where residential uses are permitted by default within employment zones, long-term displacement of production activity is far more likely.

Connecticut Practice and the Middletown Example

Service-industrial zoning is not merely theoretical. Connecticut municipalities have already implemented versions of this approach, most notably through Middletown's Service Industrial Zone.

Middletown's zone permits manufacturing, service, office, and selected retail uses within a unified district while excluding residential development. Uses are regulated based on operational characteristics—such as noise, traffic, and buffering—rather than categorical assumptions about industry. This structure allows diverse economic activity to coexist while maintaining the zone's employment and service function.

Importantly, Middletown's approach demonstrates that service-industrial zoning can be implemented within Connecticut's existing zoning enabling framework. It does not require new statutory authority, nor does it depend on special overlays or ad hoc approvals. Instead, it relies on clear definitions, intentional use structure, and performance-based standards.

Table 2 lists permitted uses in the Middletown Service Industrial Zone—confirming how commercial and industrial zoning can be integrated by the selection of compatible uses. Table 4 provides a crosswalk between the list of permitted uses in the Middletown Service Industrial Zone and the Standard Industrial Classification Code (SIC Code)[8]. This zone allows for the coexistence of a wide array of manufacturing, service, and retail industries, accounting for 74% of the potential uses under the applicable SIC Codes.

[8] Though the more recently established NAICS codes provide greater granularity, SIC codes still serve an important function in categorizing land uses at a more primary level.

One important means of ensuring compatibility between commercial and industrial uses is requiring the use of impact-based special exception approvals for activities that may not be appropriate unless special safeguards are established. Without knowing the size, scale, working hours, type, and intensity of a business, or the environmental and traffic impacts it may generate, permitting based solely on Euclidean land use categories can create serious incompatibilities.

For example, the "warehouse" is a generic term used by more than 85% of the zoning regulations in Connecticut. Warehouses range in size from 1,000 square feet to over 4 million square feet. Some warehouses focus on retail services, others on distribution activities at a local level, others on a regional or even national scale. Conflating these uses under the generic term "warehouse" can and often does create significant public backlash against these uses. When warehouses are not properly regulated to address their unique features, purposes and impacts, commissions are presented with inadequate tools to ensure development is compatible with the surrounding area.

The Institute of Transportation Engineers has identified at least five distinct types of warehouses. Similarly, the SIC Code has identified eight different types of warehouses. Despite the existence of these more sophisticated distinctions between various types of warehouse functions, Connecticut's zoning regulations have yet to adopt definitions for the wide range of specialized warehouse functions that have emerged in the last ten years.

Performance Standards and Compatibility

Service-industrial zoning works best when paired with explicit performance standards that regulate impacts directly. Rather than excluding uses based on label, municipalities can address compatibility through standards governing:

- Traffic generation and access management.
- Parking generation and impervious cover standards.
- Hours of operation.
- Noise and vibration.
- Outdoor storage and activity.
- Lighting and site design; and
- Buffering from adjacent uses.

This approach aligns zoning regulation with observable impacts and allows municipalities to respond flexibly to evolving economic activity. It also provides greater predictability for businesses, which can design facilities with clear expectations about regulatory requirements.

Strategic Advantages for Comprehensive Planning

From a comprehensive planning perspective, service-industrial zoning offers several strategic advantages. Specifically, it:

- Preserves land for employment and production without freezing it in obsolete categories.
- Supports economic resilience by maintaining space for skilled trades and value-added activity.
- Reduces land-use conflict by separating high-turnover consumer activity from employment-oriented uses; and
- Aligns zoning maps more closely with economic reality and planning intent.

Most importantly, service-industrial zoning enables municipalities to make affirmative planning choices about where and how different types of economic activity should occur, rather than relying on commercial zoning as a default or transitional category.

As the statutory environment evolves, the importance of such clarity becomes even greater — a topic addressed in the following section.

VIII. Statutory Context and Planning Implications

The preceding sections establish that accurate zoning classification is essential to sound planning regardless of statutory environment. However, recent developments in Connecticut law have materially increased the practical consequences of how municipalities distinguish between commercial and industrial land. Zoning labels that once functioned primarily as descriptive or regulatory tools now carry direct legal effects that shape redevelopment pathways, local discretion, and long-term land-use outcomes.

Understanding this statutory context is therefore necessary—not as the motivation for reexamining zoning practice, but as a reason that misclassification now carries greater risk than in the past.

CGS §8-30g and the Treatment of Industrially Zoned Land

Connecticut General Statutes §8-30g, the affordable housing appeals statute, explicitly exempts industrially zoned land from its provisions. Commercially zoned land, by contrast, remains fully subject to appeal.

This distinction has significant implications. Where land is zoned industrial, municipalities retain broad discretion to evaluate proposed uses based on local plans, zoning standards, and compatibility considerations. Where land is zoned commercial, residential development—including affordable housing—may proceed through an appeal process that substantially limits local authority to deny or condition proposals.

When §8-30g was enacted, this distinction aligned reasonably well with prevailing zoning practice. Industrial zones generally reflected areas intended for production and employment, while commercial zones were more closely associated with offices and retail activity. In many municipalities today, however, that alignment no longer holds.

As discussed earlier in this paper, numerous areas that function as employment centers, service-industrial districts, or light manufacturing areas are formally zoned commercial. In such cases, the statutory exemption for industrial land does not apply—not because the land is unsuitable for housing as a matter of planning judgment, but because its zoning classification no longer reflects its actual function or intended role.

The result is not a prohibition on housing, but a shift in decision-making authority driven by nomenclature rather than planning intent.

Special Session Public Act 25-1 and Commercial Land Conversion

Special Session Public Act (SS PA) 25-1 further elevates the importance of zoning classification by requiring municipalities to provide for summary review development or redevelopment of commercially zoned land into residential or mixed-use forms in specified contexts. Industrially zoned land is not subject to this requirement.

As with §8-30g, the statute does not prohibit municipalities from planning for housing on industrial land, nor does it mandate conversion of all commercial land. Instead, it reflects a legislative assumption that commercial zoning generally signals land that is appropriate for residential or mixed-use redevelopment, while industrial zoning signals land that warrants greater protection for employment and production.

Where zoning maps accurately reflect land-use function, this assumption may be reasonable. Where they do not, statutory requirements may apply in ways that municipalities did not anticipate and may not intend.

In particular, areas that function as service-industrial districts—supporting contractors, fabrication, warehousing, skilled trades, or light manufacturing—may be exposed to redevelopment pressures that conflict with long-standing economic and planning objectives simply because they are zoned commercial.

Interaction Effects and Incremental Loss of Employment Land

The combined effect of §8-30g and SS PA 25-1 is not best understood as a single statutory mandate, but as an interaction effect between state housing policy and local zoning practice.

Where industrial and service-industrial activity is embedded within commercial zoning districts, these statutes may operate together to encourage residential conversion through market pressure rather than deliberate planning choice. Over time, this can result in the incremental loss of employment and service land—often parcel by parcel, project by project—without a clear policy decision to that effect.

Importantly, these outcomes are not the result of noncompliance or bad faith on the part of municipalities. They reflect zoning frameworks that were developed for an earlier economic context and have not been recalibrated to account for the legal significance now attached to zoning classification.

Planning Implications and the Role of Intentional Zoning

The statutory context does not diminish the importance of housing, nor does it suggest that industrial land should be categorically immune from residential development. Rather, it underscores the need for intentional zoning—zoning that clearly communicates planning objectives and aligns regulatory structure with actual land use.

Reexamining industrial, commercial, and service-industrial zoning allows municipalities to:

- Ensure that zoning classifications accurately reflect land-use function and impact.
- Preserve appropriate land for employment and production where such uses remain a planning priority.
- Provide clarity to property owners, residents, and developers about long-term expectations; and
- Allow state housing statutes to operate as intended, rather than as a byproduct of misclassification.

Accurate classification is not a loophole, nor an avoidance strategy. It is a prerequisite for comprehensive planning in a statutory environment where zoning labels now carry substantive legal consequences.

IX. Conclusion

This paper began with a simple but increasingly consequential observation: zoning classifications developed for a different economic era no longer reliably describe how land is used, how impacts are generated, or how communities function economically. Over time, the distinction between industrial and commercial activity has blurred, while zoning frameworks have remained largely static. The result is a growing disconnect between land-use labels and land-use reality.

Modern industrial and service-industrial activity often bears little resemblance to the heavy manufacturing that shaped twentieth-century zoning practice. Much contemporary industry is clean, quiet, and enclosed. It frequently generates predictable traffic patterns, limited environmental impacts, and durable fiscal benefits. At the same time, many uses commonly treated as "commercial" are highly traffic-intensive, operationally disruptive, and infrastructure-demanding. When zoning codes continue to rely on inherited assumptions—treating industry as categorically incompatible and commerce as inherently benign—they risk undermining the very objective zoning is meant to serve, compatibility.

Misclassification is not merely a semantic issue. When industrial and service-industrial functions are absorbed into commercial zoning districts, their economic role becomes obscured, their long-term viability less secure, and their loss more likely to occur incrementally rather than through deliberate planning choice. Over time, this can erode employment land, weaken economic resilience, distort transportation planning, and reduce municipal flexibility.

The stakes of misclassification have increased as well. In Connecticut's current statutory environment, zoning labels now carry substantive legal consequences. Statutes governing affordable housing and commercial redevelopment attach different regulatory pathways to commercial and industrial land. Where zoning classifications no longer align with actual function or planning intent, state policy may operate in ways that municipalities did not anticipate—not because of resistance to housing, but because zoning regulations and zoning maps have not kept pace with economic change.

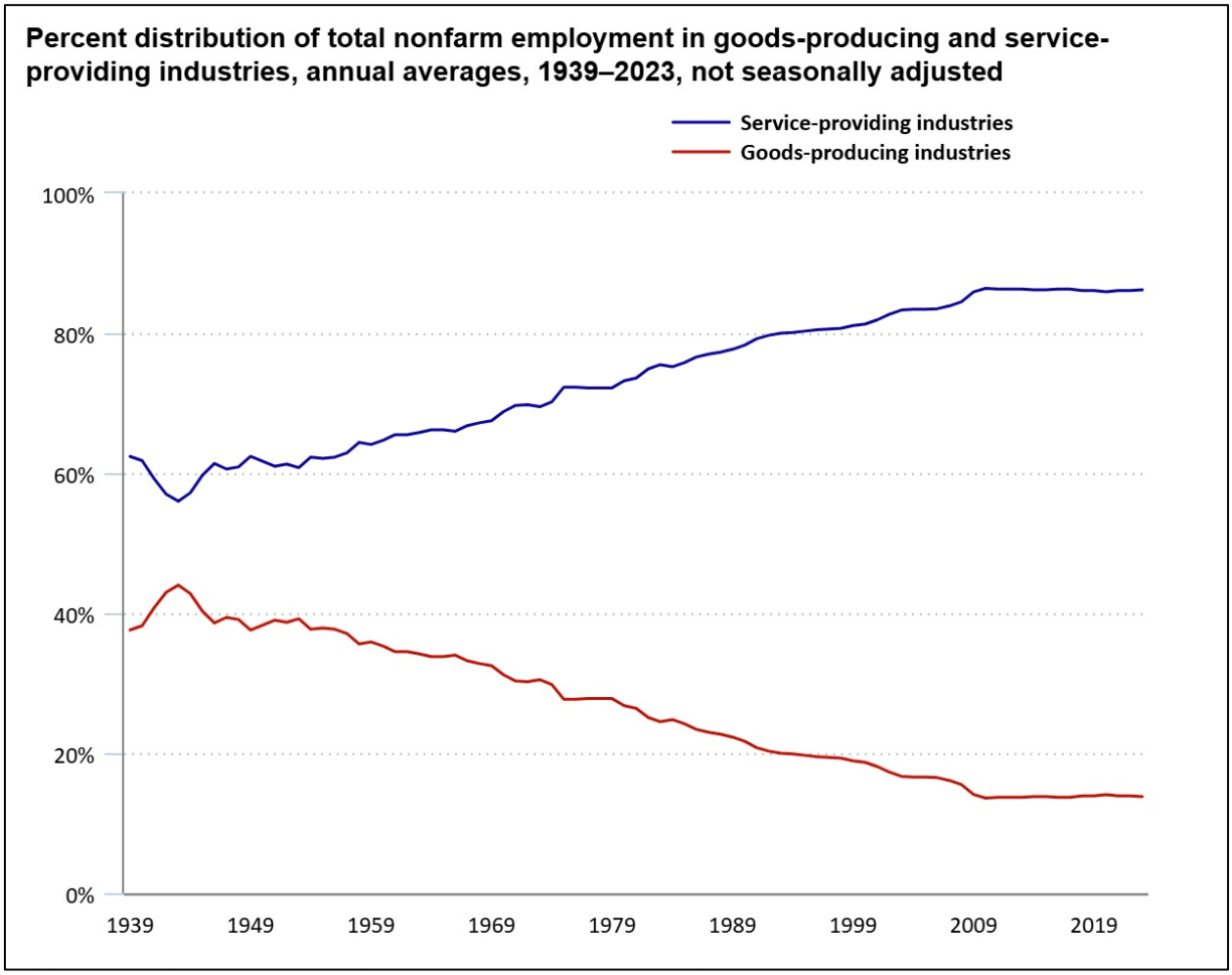
Importantly, none of these observations are cause to argue against housing or diminish the importance of addressing affordability. Housing is a critical component of healthy communities. Equally essential, however, are the employment, service, and production functions that support local economies, municipal finances, and workforce stability. Comprehensive planning requires attention to the full spectrum of land uses, not the elevation of one objective at the expense of others.

Service-industrial zoning offers a practical path forward. By recognizing the distinct role of low-impact industrial and service activity, regulating uses based on measurable impacts, and preserving land for employment through non-cumulative zoning structures, municipalities can align zoning practice with contemporary economic reality. Doing so enhances clarity, predictability, and resilience—without freezing land in obsolete categories or foreclosing future choice.

Ultimately, the question is not whether zoning should accommodate change, but how intentionally that change is guided. Accurate classification is the foundation of sound planning. By reexamining industrial, commercial, and service-industrial zoning with clear eyes and updated assumptions, planning and zoning commissions can better ensure that growth—of all kinds—occurs deliberately, compatibly, and in service of long-term community objectives.

X. Appendices

Table 0: Long-Term Trends in Decline in Goods Producing Industries in the United States



Source: U.S. Bureau of Labor Statistics

Table 1: Examples of Service-Based Industries Found in the United States

1. Apparel and fashion. These companies often use light machinery, are noise-compliant, and frequently operate in urban, high-density areas.
    a. Custom Apparel & Cut-and-Sew: Companies like Cut and Sew USA (NYC) or Apparel Production Inc. (New York's Garment District).
    b. Small-Batch Fashion: Lefty Production Co. (Los Angeles) specializes in low-minimum, small-batch production
    c. Boutique Knitwear & Print: Royal Apparel (NY) focuses on sustainable and customized apparel.
2. Artisan food and beverage. Artisan production is frequently permitted in light industrial/mixed-use zones due to low impact.
    a. Craft Coffee Roasters: Small-scale roasting and packaging.
    b. Microbreweries/Distilleries: Often include a retail tasting room (taproom) component.
    c. Artisan Bakeries & Patisseries: Specialized production for local wholesale/retail.
3. Specialized design and manufacturing. These companies focus on high-value, small-batch, or customized goods.
    a. Furniture & Woodworking: Custom furniture workshops and cabinet makers.
    b. Jewelry & Watch Making: High-end, precise manufacturing with low environmental impact.
    c. Ceramics/Pottery Studio: Boutique production of home goods.
    d. Leather Goods Manufacturing: Small-batch, handmade leather items.
4. Technology and specialized assembly. These types of businesses are often the primary tenants in "Business and Research Parks".
    a. 3D Printing Workshops: Rapid prototyping and small-batch production.
    b. Electronics Assembly: Small-scale assembly of consumer devices.
    c. Medical/Dental Instrument Manufacturing: Precision, clean-room assembly.
5. Creative and publishing.
    a. Graphic Design and Print Shops: Digital printing, bookbinding, and screen printing.
    b. Signage Manufacturing: Custom, specialized sign fabrication.

Why These Fit Business Zones

1. Light Industrial/Mixed-Use Zoning: These zones allow for "clean" manufacturing, where production is largely indoors, and noise/emissions are minimal.
2. Low Environmental Impact: Unlike heavy industrial, these businesses do not require massive freight traffic or generate excessive pollution.
3. Small Footprint: They can often fit into repurposed older buildings or modern business parks.

Table 2: Middletown Connecticut Service Industrial Zone

#	Permitted Uses in the Service Industrial Zone	SIC Codes Covered
1	Blacksmith shop, welding or other metal working shop and machine shops.	13
2	Building and related trades--including carpenter shops, electrical, plumbing, paint shops, heating shops, paper hanging shops, furniture upholstering and similar enterprises, but not within 100 ft. from any residential zone. In the B-2 Zone no exterior storage shall be permitted.	28
3	Retail Sales Yard (§4.23)	69
4	Laboratories--including experimental, photographic or testing laboratories, dental and medical, provided no operation shall be conducted or equipment used which would create hazards, noxious or offensive conditions.	10
5	Manufacturing – A use engaged in the basic processing and manufacturing of materials, parts or products from extracted or raw materials or from previously prepared materials, including processing, fabrication, assembly, treatment, packaging, and incidental storage, sales and distribution of such products.	16
6	Newspaper and job printing.	36
7	Printing and related trades--including publishing, job printing, lithographing; blueprinting, etc., but not within 100 ft. of any residential zone.	31
8	Public utilities buildings and structures—including Storage yards and vehicle parking area.	26
9	Recreational Facility, Public	2
10	Retail sales or rental of automobiles, trucks, trailers, boats, motorcycles, new or used; warehousing and distribution of unprepared food products at no cost to general public for consumption off-site. Further, the location of the "distribution of unprepared food products" use shall not have frontage on a state highway; construction equipment, agricultural equipment, power tools, new or used; scientific and laboratory supplies.	30
11	Studios -- motion picture, recording, television and radio production studios, transmitters and related equipment.	10
12	Wholesale and warehousing of items manufactured on the premises.	12
13	Warehousing of items or materials not produced or created on the premises (except items prohibited as shown elsewhere in the Code).	8
14	Office buildings – including general and professional tenants but not including mental health/substance abuse treatment facilities, offices or clinics.	26
15	Motor vehicle services and repair and body and fender repair and paint shop, provided that no building or structure for said use is located within 50 ft. of any residential zone and further provided that all outside storage of material associated with said business be screened so as to not be observable from abutting properties.	22
16	Data Centers - The following standards shall apply to data centers: (A) Building Facades visible from a City Street or Right of Way, shall avoid the use of undifferentiated surfaces by including at least two of the following design elements: change in building height, building step-backs or recesses, fenestration, change in building material, pattern, texture, color, or use of accent materials. When a building has more than one façade visible from a City Street or City Right of Way, such principal building facades shall be consistent in terms of design, materials, details, and treatment. (B) Screening of Mechanical Equipment. In	7

	order to minimize visibility from adjacent roads and adjacent properties, ground level and roof top mechanical equipment shall be screened. This screening may be provided by a principal building. Mechanical equipment not screened by a principal building shall be screened by a visually solid fence, screen wall or panel, parapet wall, or other visually solid screen that shall be constructed of materials compatible with those used in the exterior construction of the principal building. (C) Exterior Lighting. All exterior lighting shall be designed and constructed with cutoff and fully shielded fixtures that direct light downward and into the interior of the property and away from adjacent roads and adjacent properties. (H) Buffer Yard Requirement. Any property that abuts a residential zone shall site the proposed data center in a manner to screen or buffer the data center by use of natural topography and preservation of existing vegetation, supplemented by new vegetation, if needed, with landscaped earthen berm.	
17	Brewery/Distillery.	5

#	Special Exception Uses in the Service Industrial Zone	SIC Codes Covered
18	Building material salvage yards. (§4.23)	3
19	Ready-mix concrete plant. (§5.6.8.19)	2
20	Restaurant or lunchroom. (§5.6.8.20)	2
21	Natural Resource Extraction. (§5.6.8.10)	13
22	Automobile, truck, trailer, farm implements and similar automotive equipment sales, new and used. (§5.6.8.25)	12
23	Adaptive historic preservation use harmonious with the physical characteristics and originally designed use of the structure. (§5.6.8.27)	2
24	Child Care Centers. (§5.6.8.2)	1
25	Solid Waste Facility (§5.6.8.32) All proposals including expansion to existing facilities shall be subject to Category 4 site plan review. Except that: Solid Waste Disposal Areas (§1.15 Definitions) shall not be permitted in the IT zone.	3
26	Brewpub. (§5.6.8.47)	5
27	Accessory Outdoor Uses for Breweries/Distilleries. (§5.6.8.47)	5
28	Cannabis Micro-Cultivation (§5.6.8.49)	0
29	Recreational Facility, Indoor. (§5.6.8.44)	2

Table 3: Trip Generation Rates for Retail, Service Land Uses and Industries Based on the 11th Edition of the ITE Trip Generation Manual

	Code	Land Uses	Weekday Vehicle Trips per 1,000 sq ft GFA	Range Low	Range High	Standard Deviation
Retail	851	Convenience Store	762.28	325.78	1436	333.89
	882	Marijuana Dispensary	211.12	48	791.2	246.9
	858	Farmers Market	174.9	163.68	185.3	***
	868	Book Superstore	143.6	143.6	143.6	***
	899	Liquor Store	107.21	82.63	183.3	40.75
	821	Shopping Plaza (40-150k)	94.49	57.86	175.3	20.65
	850	Supermarket	93.84	30.09	170.2	27.05
	880	Pharmacy/Drugstore w/o Drive-Thru Window	90.8	81	106.5	8.9
	817	Nursery (Garden Center)	68.1	18.46	233.8	60.89
	876	Apparel Store	66.4	66.4	66.4	***
	814	Variety Store	63.66	20.51	133.7	25.23
	843	Automobile Parts Sales	54.57	15.38	90.41	20.19
	822	Strip Retail Plaza (<40k)	54.45	47.86	65.07	7.81
	815	Free-Standing Discount Store	53.87	33.92	107.1	12.93
	813	Free-Standing Discount Superstore	50.52	21.39	85.01	12.61
	857	Discount Club	42.46	25.44	78.02	13.04
	863	Electronics Superstore	41.05	31.01	59.18	11.92
	820	Shopping Center (>150k)	37.01	17.27	81.53	12.79
	862	Home Improvement Superstore	30.74	18.35	55.35	8.58
	840	Automobile Sales (New)	27.64	14.98	41.78	7.01
	848	Tire Store	27.6	13.23	88.78	15.9
	841	Automobile Sales (Used)	27.06	4.44	71.21	17.91
	823	Factory Outlet Center	26.59	13.78	50.98	11.4
	861	Sporting Goods Superstore	23.78	11.51	35.15	8.97
	849	Tire Superstore	20.37	14.07	27.37	4.45
	869	Discount Home Furnishing Superstore	20	12.01	47.81	9.2
	812	Building Materials and Lumber Store	17.05	3.02	80.45	16.46
	895	Beverage Container Recycling Depot	9.78	7.44	12.44	***
	816	Hardware/Paint Store	8.07	3.82	20.33	5.66
	879	Arts and Crafts Store	6.85	6.85	6.85	***
	890	Furniture Store	6.3	0.8	15.36	3.46
	897	Medical Equipment Store	6.00	6.00	6.00	***
	842	Recreational Vehicle Sales	5.00	2.07	16	4.47

	864	Toy/Children's Superstore	5.00	4.99	5.00	***
	881	Pharmacy/Drugstore with Drive-Thru Window	3.74	1.93	7.25	1.55
	866	Pet Supply Superstore	3.55	2.19	4.96	1.19
	867	Office Supply Superstore	2.77	1.61	4.55	1.18
	818	Nursery (Wholesale)	2.41	0.66	9.00	2.45
	872	Bed and Linen Superstore	2.22	2.22	2.22	***
	865	Baby Superstore	1.82	1.82	1.82	***
	810	Tractor Supply Store	1.4	0.75	1.83	0.45
	811	Construction Equipment Rental Store	0.99	0.81	1.4	0.3
	875	Department Store	0.58	0.2	1.3	0.39
Service	937	Coffee/Donut Shop with Drive-Thru Window	533.57	309.41	869	243.65
	934	Fast-Food Restaurant with Drive-Thru Window	467.48	98.89	1138	238.62
	933	Fast-Food Restaurant w/o Drive-Thru Window	450.49	95.91	1054	310.99
	945	Convenience Store/Gas Station	265.12	68.5	701	142.37
	950	Truck Stop	224.00	205.75	240.22	***
	938	Coffee/Donut Shop with Drive-Thru Window& No Indoor Seats	179.00	80.00	293.00	74.48
	944	Gasoline/Service Station	172.01	77.00	460.00	96.45
	949	Car Wash and Detail Center	156.2	156.2	156.2	***
	947	Self-Service Car Wash	108.00	108.00	108.00	***
	932	High-Turnover (Sit-Down) Restaurant	107.2	13.04	742.4	66.72
	912	Drive-in Bank	100.35	32.67	408.4	68.62
	930	Fast Casual Restaurant	97.14	97.14	97.14	***
	936	Coffee/Donut Shop without Drive-Thru Window	93.08	38.76	255.5	42.71
	931	Fine Dining Restaurant	83.84	33.45	139.9	40.01
	948	Automated Car Wash	77.5	50	104.5	33.07
	941	Quick Lubrication Vehicle Shop	69.57	69.57	69.57	***
	971	Brewery Tap Room	61.69	31	93.45	***
	970	Wine Tasting Room	45.96	18.24	159.3	44.79
	935	Fast-Food Rest. with Drive-Thru Window & No Indoor Seats	43.00	43.00	43.00	***
	943	Automobile Parts and Service Center	16.6	3	113.5	16.17
	911	Walk-in Bank	12.13	2	24.15	12.41

	975	Drinking Place	11.36	3.74	30.09	7.81
	926	Food Cart Pod	6.16	4.29	6.86	1.08
	920	Copy, Print, and Express Ship Store	2.78	2.78	2.78	***
	942	Automobile Care Center	2.25	1.2	5.3	1.49
	918	Hair Salon	1.21	1.21	1.21	***
Industrial	170	Utility	12.29	1.6	65.03	14.32
	180	Specialty Trade Contractor	9.82	3	43.33	8.56
	110	General Light Industrial	4.89	0.34	43.86	4.06
	140	Manufacturing	4.75	0.83	49.5	3.2
	156	High-Cube Parcel Hub Warehouse	4.63	0.95	14.38	5.06
	130	Industrial Park	3.37	1.41	14.98	2.6
	157	High-Cube Cold Storage Warehouse	2.12	1.18	2.85	0.73
	155	High-Cube Fulfillment Center Warehouse	1.81	0.88	3.34	0.76
	150	Warehousing	1.71	0.15	16.93	1.48
	151	Mini-Warehouse	1.45	0.38	3.25	0.92
	154	High-Cube Transload & Short-Term Storage warehouse	1.4	0.2	4.32	0.86
	160	Data Center	0.99	0.65	1.32	***
	190	Marijuana Cultivation and Processing Facility	0.69	0.69	0.69	***

Source: ITE, Trip Generation Manual, 11th Edition, September 2021

Table 4: Middletown CT Service Industrial Zone Permitted Uses Cross-Walked to Standard Industrial Classification Codes

Standard Industrial Classification Categories	Total Entities
Manufacturing	139
Services	89
Retail Trade	71
Wholesale Trade	34
Construction	19
Public Administration	19
Mining	13
Transportation	12
Finance, Insurance, Real Estate	8
Agriculture	2
Grand Total	406