



**US Department of Transportation  
Federal Transit Administration**

# **DISCUSSION PAPER ON THE EVALUATION OF ECONOMIC DEVELOPMENT**

Federal Transit Administration  
Office of Planning and Environment

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# Table of Contents

<b>1. INTRODUCTION</b>	<b>1</b>
<b>1.1. APPROACH TO THE ECONOMIC DEVELOPMENT CRITERION</b>	<b>1</b>
<b>1.2. OVERVIEW OF POTENTIAL MEASURES</b>	<b>3</b>
<b>1.3. ASSESSMENT METHOD</b>	<b>3</b>
<b>2. ECONOMIC DEVELOPMENT FACTORS</b>	<b>5</b>
<b>2.1. FACTOR I – DEVELOPABILITY OF LAND NEAR STATIONS</b>	<b>5</b>
2.1.1. INFORMATION PROVIDED BY PROJECT SPONSORS	5
2.1.2. TASKS FOR THE CONSULTANT	8
<b>2.2. FACTOR II. TRANSIT-SUPPORTIVE PLANS AND POLICIES</b>	<b>11</b>
2.2.1. INFORMATION REQUIRED FROM PROJECT SPONSORS	12
2.2.2. TASKS FOR THE CONSULTANT	14
<b>2.3. FACTOR III – ECONOMIC CLIMATE</b>	<b>29</b>
2.3.1. INFORMATION REQUIRED FROM PROJECT SPONSORS	30
2.3.2. TASKS FOR THE CONSULTANT	31
<b>APPENDIX A - ANALYSIS OF PARCEL DATA</b>	<b>36</b>
<b>REQUIRED DATA</b>	<b>36</b>
<b>POTENTIAL DATA ISSUES</b>	<b>38</b>
<b>CALCULATION OF INDICATORS</b>	<b>39</b>
<b>APPENDIX B – BLANK TEMPLATES</b>	<b>42</b>
<b>TEMPLATE A-1: PROJECT SPONSOR SUBMISSION</b>	<b>42</b>
I - DEVELOPABILITY OF STATION AREA LAND	42
II – TRANSIT-SUPPORTIVE PLANS AND POLICIES	44
III – ECONOMIC CLIMATE	46
<b>TEMPLATE B-1: CONSULTANT REPORT TO FTA</b>	<b>48</b>
I - DEVELOPABILITY OF STATION AREA LAND	48
II – TRANSIT-SUPPORTIVE PLANS AND POLICIES	51
III – ECONOMIC CLIMATE	55

# 1. INTRODUCTION

## 1.1. Introduction

In the interest of receiving robust public input and comment on the topic, this document is intended to present one possible method for evaluating the potential economic development impacts of projects applying for Federal Transit Administration (FTA) Section 5309 New Starts funds. After receiving feedback on how it might evaluate economic development impacts of New Starts projects, FTA intends to prepare proposed policy guidance at some point in the future that would be published for notice and comment before any particular approach is finalized.

For the purposes of the economic development criterion, FTA defines economic development as the extent to which a proposed New Starts project is likely to contribute to additional, transit-supportive development within the new station areas to be constructed as part of the project. In 2005, FTA initiated a study of the economic development impacts of transit investments with the objective of developing a quantitative measure of the economic development impacts of transit to determine whether or not it could be reliably included in the evaluation of major transit capital investments. That study developed and evaluated two approaches to estimating the economic development impacts of major transit capital investments:

- Forecasting economic benefits at a regional scale using regional economic models; and
- Attempting to predict station area development impacts based on proximity to rail stations.

These two methods appear to be unsatisfactory for a variety of reasons. The use of regional economic models was found to be relatively expensive and produced widely divergent results between the two case studies that were not easily explained. The second approach of using rail station proximity to forecast station area development was also unsatisfactory because the analysis found a statistically significant development impact where no impact was expected or observable and failed to find any significant impact in areas where most observers would agree an economic development impact has occurred.

In order to guide future research in this area, FTA convened a panel of experts in late 2007 to consider the potential methodologies available to measure the economic development benefits of transit. The panel suggested two main methods to achieve FTA's goal: 1) to use hedonic models to estimate the land value impacts of major transit investments, and 2) to use integrated transportation/land-use models to forecast changes in land-use patterns that result from transportation investments and the benefits associated with those changes. FTA has two ongoing research projects on the use of integrated transportation/land-use models and has sponsored two Transit Cooperative Research Program (TCRP) projects (H-39 and SH-12) to study the impact of transit on economic development. The TCRP studies are ongoing.

The panel also reviewed a number of other economic development methodologies (see the report on FTA's website at [http://www.fta.dot.gov/documents/Econ\\_Dev\\_Expert\\_Panel\\_Report.pdf](http://www.fta.dot.gov/documents/Econ_Dev_Expert_Panel_Report.pdf)) including a qualitative assessment approach such as the one described later in this discussion paper. FTA is considering using this qualitative assessment approach as an interim evaluation methodology until the results of these ongoing research efforts are available; an approach supported by the expert panel.

## **1.2. Approach to the Economic Development Criterion**

The approach described in this discussion paper is not a modeling approach and does not rest on forecasts of economic development. Rather, it describes a method based on an assessment of the key conditions that FTA believes contribute to and facilitate the economic development impacts of transit projects.

The method envisioned by FTA is based on a review of the academic and professional literature on the impact of transportation projects on economic development. The basic underlying relationship between economic development and transportation is accessibility. When a transportation project improves the accessibility of a parcel of land, the value of that parcel increases along with its development potential. However, several studies have shown that additional development does not occur simply as a result of more accessibility, but also depends on the availability of developable land, local policies, and local economic conditions.

The economic development criterion described here incorporates elements of the previous land use criterion, including land use plans, policies, and implementation support activities that may lead to additional transit-supportive development, as well as indicators of regional economic health and local development activity. At a conceptual level the economic development assessment is the product of two considerations:

- The total additional transit-supportive development that can be expected to occur in station areas; and
- The contribution of the New Starts transit project to achieving this development.

The first consideration, total expected development, is dependent upon three specific factors:

1. The developability of land in station areas;
2. Land use plans and policies encouraging transit-supportive development; and
3. The economic climate for development.

The second consideration, the contribution of the New Starts project, is further dependent upon two factors:

4. The accessibility benefits of the project; and
5. The permanence of the transit investment.

This yields a total of five factors to be assessed, as numbered above which are consistent with the five factors cited in the Notice of Proposed Rulemaking (NPRM) on New Starts issued on August 3rd, 2007.<sup>1</sup> Readers may wish to review the NPRM and related comments on FTA's [website](#)<sup>2</sup>. In FTA's conceptual approach, the last two factors would not require project sponsors to generate or submit additional information but would be based on information already routinely submitted to FTA as part of the New Starts evaluation and rating process. The accessibility benefits of a project can be assessed based on the user benefits that accrue to those who live or are destined to zones near the proposed stations. This measure as well as other potential measures of accessibility can be derived from each project sponsor's submission of information

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<sup>1</sup> Federal Register Vol. 72, No. 149, 43328-43377;  
[http://www.fta.dot.gov/planning/newstarts/planning\\_environment\\_5615.html](http://www.fta.dot.gov/planning/newstarts/planning_environment_5615.html)

<sup>2</sup> <http://www.regulations.gov/fdmspublic/component/main?main=DocumentDetail&d=FTA-2007-0033-0002>

on their travel forecasts and will not require any additional work. The permanence of the investment can be measured by the average useful life of the investment weighted by the cost of each major project element. This information is routinely provided on the Standardized Cost Category worksheets currently submitted by each project sponsor. These factors will not be addressed further in this discussion paper. The subjects of this discussion paper are the potential submission requirements for factors 1, 2, and 3 and their evaluation.

### **1.3. Overview of Potential Measures**

The potential **developability** measure would attempt to determine the extent to which additional development could be accommodated in the proposed station areas. Evaluation factors might include the amount of vacant land available for development in station areas measured by the number and size of vacant and developable parcels. In addition, transit projects that significantly increase land values may spur re-development of underutilized parcels. The existence of underutilized land in station areas might be identified by a particularly low ratio of improvement value to land value. Often, structural barriers inhibit additional development; therefore the analysis of developability might include an assessment of barriers such as environmental issues, inadequate infrastructure, zoning or regulations, or a preponderance of small/non-contiguous parcels.

The evaluation of **transit-supportive plans and policies** would indicate whether local governments were actively promoting high density transit supportive land uses. This factor is similar to portions of the existing land use criterion and would evaluate local policies that promote pedestrian movements, promote mixed uses adjacent to transit, limit parking, and provide high, transit supportive matter-of-right residential and commercial densities in station areas.

The evaluation of **economic climate** would attempt to assess the economic health of the region and corridor as an indicator of the extent to which economic conditions are likely to support additional growth in station areas. This measure would, by necessity, rely on a variety of measures dictated by the availability and quality of local data sources. Economic indicators might include forecasts of metropolitan area growth, historical data on the growth of corridor and regional property values, trends in commercial floorspace asking rents in the corridor, median prices for owner-occupied housing units in the corridor and region, average corridor and regional land values, commercial floorspace vacancy rates, and the existence of development subsidies and tax policies to promote additional development and their associated costs. In corridors with a significant amount of vacant or underutilized land, the project sponsor would need to assess the reasons for the lack of development and the degree to which those factors hindering development would persist after the proposed project is constructed.

### **1.4. Assessment Method**

The overall approach to assessing a project and assigning an economic development rating would be somewhat different than for the current land use criterion. For land use, contractors selected by FTA review land use materials submitted by the project sponsor, prepared an assessment report, and assigned preliminary ratings. In contrast to that approach, for the economic development criterion contractors would assemble and analyze information provided by the project sponsor in more detail than for the land use criterion and would not assign preliminary ratings. They would then prepare a summary report to FTA, and a panel of FTA experts would assign ratings for all projects. (For some metrics that can be described with

quantitative information, the consultant could assign “benchmark” ratings of “high,” “medium,” or “low” to assist FTA in assigning an overall rating; however, no particular weighting scheme is provided for combining the individual factors or metrics.) This process can therefore be described in three steps, as follows:

1. The project sponsor assembles supporting information and provides this information to FTA and its contractors. The narrative template for providing this information is referred to as Template A-1.
2. FTA contractors review the information, conduct additional analysis, and place it in a consistent summary format. The document template in which the contractors should provide this summary information is referred to as Template B-1. It is accompanied by two spreadsheets (available from FTA but not included here due to their size and format), referred to as Template B-2 and Template B-3, that provide calculation aids for the reviewer.
3. FTA staff review the information assembled by the contractors and assign a rating based on this information.

The economic development criterion envisioned here is similar to the previous land use criterion in that it focuses on land use plans, policies, and development within a ½ mile radius of proposed new stations associated with the New Starts project. Existing station areas are not considered, nor are any broader impacts that may occur beyond the immediate station areas.

The remainder of this discussion paper describes the potential approach to assessing and rating each factor. For each factor, the paper describes 1) the information that would be provided by the project sponsor; and 2) the analysis and reporting tasks for FTA’s consultants.

## 2. ECONOMIC DEVELOPMENT FACTORS

### 2.1. *Factor I – Developability of Land Near Stations*

This factor considers the supply of land, and specifically the extent to which additional development could be accommodated in the proposed station areas. This factor considers the availability of vacant and underutilized land, as well as the potential for more intensive reuse of existing structures. Developability is also influenced by a variety of other conditions, such as zoning regulations, requirements for land assembly and environmental cleanup, infrastructure needs, and economic and market conditions that affect the intensity of development or redevelopment that is economically viable. These conditions are considered under Factors II and III.

#### 2.1.1. Information Provided by Project Sponsors

Project sponsors would provide the following information:

- a. An ordered list of stations, identifying the jurisdiction(s) and/or institution(s) with land use planning authority over the station area.
- b. A brief description (no more than 1 paragraph per station or station cluster) of existing station area land use conditions, including typical uses, building styles, pedestrian network, and vacant or underutilized land. The narrative should address the extent to which land is available for new development or redevelopment/intensification of uses with transit-supportive densities and design characteristics.
- c. Base and forecast year population and employment for the metropolitan area, corridor, and station areas (as described below).
- d. Information to assist FTA's consultant in obtaining parcel-level tax assessors' data (as described below).
- e. Any studies that have been conducted of development potential in the station areas. The studies should be identified in Template A-1 and attached as supporting documentation).
- f. (Optional) Narrative text highlighting any key issues, not addressed above or in the referenced documents, affecting the potential for new development, redevelopment, or further intensification of uses in station areas. The narrative should focus on the supply of land for development or redevelopment. Market conditions/demand will be covered under Factor III.
- g. Any available supporting documentation including:
  - Aerial imagery of proposed station areas, showing the proposed station location and a ½ mile radius (required);
  - Maps of existing land use in station areas (optional); and
  - Ground-level photographs of typical uses and station area conditions (optional).

Items (a), (b), (d), (e), and (f) should be provided in Template A-1 or attachments. Quantitative data item (c) is already included as part of the New Starts reporting templates, which should be provided as documentation.

**Factor 1c - Base and Forecast Year Population and Employment**

Data for the metropolitan area, central business district (CBD), corridor, and station areas would be provided by the project sponsor in the New Starts reporting templates, as illustrated in Table 1. The corridor should be the same as defined for project planning purposes. If it is not already defined, a corridor representing a one-mile buffer around the proposed alignment is recommended.

**Table 1: Sample Reporting for Existing and Forecast Population and Employment**

<b>Data</b>	<b>Base Year 2000</b>	<b>Forecast Year 2030</b>	<b>Growth (%)</b>
<b>Metropolitan Area</b>			
Total Population	1,781,618	3,117,160	75%
Total Employment	948,987	1,702,272	79%
<b>Central Business District</b>			
Total Employment	58,658	93,281	59%
Employment Density (Employees per Square Mile)	29,239	46,641	
<b>Corridor</b>			
Total Population	113,020	192,003	70%
Total Employment	87,872	173,890	98%
Total Land Area (Square Miles)	60.9		
Population Density (Persons per Square Mile)	1,856	3,154	
Employment Density (Jobs per Square Mile)	1,443	2,856	
<b>Total, All Station Areas</b>			
Total Population	21,072	44,368	111%
Total Employment	37,184	66,605	79%
Total Land Area (Square Miles)	9.2		
Population Density (Persons per Square Mile)	2,290	4,823	
Employment Density (Jobs per Square Mile)	4,042	7,240	
<b>Station Area #1</b>			
Total Population	21,072	44,368	111%
Total Employment	37,184	66,605	79%
Total Land Area (Square Miles)	9.2		
Population Density (Persons per Square Mile)	2,290	4,823	
Employment Density (Jobs per Square Mile)	4,042	7,240	
Etc.			

To estimate station area population and employment, project sponsors would use geographic information systems (GIS) to draw ½-mile buffers around each station. The methodology is described in Appendix A to the *Reporting Instructions for the Section 5309 New Starts Criteria*, “Sample Methodology for Estimating Station Area Socio-Economic Statistics.” As noted in this discussion paper, overlapping station areas could be grouped into clusters.

The Central Business District (CBD) is defined as the metropolitan area’s primary CBD, or of the transit project does not serve the primary CBD, the largest employment center served by the

project. Project sponsors would be encouraged to use standard census or local transportation modeling definitions of the CBD, and not expand the boundaries excessively. Expanding the boundaries would increase employment served but also decrease the average density of this employment.

For metropolitan areas, it is recommended that the primary metropolitan statistical area (PMSA) be used. However, alternative definitions could be selected based on the availability of regional forecasts. The definition of the metropolitan area would be provided if necessary.

#### ***Factor 1d - Parcel-Level Tax Assessors' Data***

FTA's consultants would perform an analysis of parcel-level tax assessors' data to evaluate various indicators of development potential for the proposed corridor and station areas. To support this analysis, the project sponsor would provide:

1. The names, telephone numbers, and emails of contact staff at local jurisdictions who can provide the tax assessors' data to the consultant; and
2. A formal request to the local jurisdiction staff for their cooperation in providing these data to FTA's consultant for the purpose of New Starts project review.

FTA's consultants would then perform the actual data acquisition to ensure that the correct data are acquired and that any questions about the data can be resolved. The assessors' data should include, at a minimum, land use type, assessed (or market) land value, and assessed (or market) improvement value.

#### ***Factor 1e - Estimates of Station Area Development Potential***

If any such studies have been conducted, the project sponsor would submit information estimating the total amount of development that either could be accommodated or is forecast to occur in station areas. Development projections are often made as part of a market assessment study conducted during the station area planning process. There are two common approaches to forecasting development:

- A **build-out analysis** estimates the total additional development that could be accommodated under existing and/or proposed zoning. The build-out analysis does not consider market conditions or the timeframe over which such development is expected to occur. An advantage of this approach is that it removes subjectivity and uncertainty associated with predicting future market conditions. However, it may not consider changes to zoning that could occur in the future, or the redevelopment of existing properties which will depend upon market conditions. Also, the results typically do not consider other political and technical constraints such as traffic capacity, neighborhood opposition, or parcel buildability. Furthermore, height, bulk, and coverage restrictions that limit density beyond the limits imposed by floor area ratios (FAR) or residential density or lot size restrictions can make true build-out capacity difficult to calculate.
- A **market analysis** involves subjective assessment on the part of a local analyst to determine what the market might realistically demand within a given timeframe. This assessment is based on discussion with local real estate experts and developers as well as a review of market indicators and the availability of suitable land. The primary drawback to market analysis is its inherent subjectivity, and different analysts may come to very different conclusions about development potential.

In addition, some studies may simply assess development potential from a qualitative perspective. Because of their uncertainty and subjectivity, FTA would consider build-out or market analysis findings as an additional piece of information but would not place significant weight on the results. Nevertheless, these findings can provide useful information for local project planning purposes. The project sponsor should provide information that has already been developed as part of the planning process, but not to conduct additional work simply for the purposes of the New Starts submission.

### **2.1.2. Tasks for the Consultant**

The consultant would provide FTA with the following information in Template B-1:

- a. An ordered list of proposed stations, identifying which jurisdiction(s) and/or institution(s) have land use planning authority over each station area (1/2 mile radius).
- b. A description, not to exceed one page, of existing land use conditions in station areas. This description should primarily focus on the availability of land for transit-supportive development or redevelopment. To the extent that factors such as built density, building design, pedestrian accessibility, and parking supply affect developability, these factors should be noted. The summary description should be based on the qualitative description provided by project sponsors as well as the consultant's own assessment of station area conditions after reviewing maps, photographs, and other documentation, and conducting a field visit if necessary.
- c. A table of base and forecast year population and employment as provided by the project sponsor (Template B-1, Table 1c). This table should include data for all station areas, but not for individual station areas. The consultant should also note any unusual definitional issues (e.g., definition of metropolitan area, CBD boundaries). This data should first be copied into the yellow cells of Table 1c in Template B-3, as it is linked to the calculation of additional data items.
- d. An estimate of the total vacant and underutilized land in new station areas, along with a benchmark rating of this capacity (see below for additional guidance). Table 1d in Template B-3 can be used to perform calculations for the corresponding table in Template B-1.
- e. A summary of any build-out or market analysis information provided by the project sponsor (Template B-1, Table 1e; see below for additional guidance). Table 1e in Template B-3 can be used to perform calculations for the corresponding table in Template B-1.

### ***Factor 1d - Development and Redevelopment Potential***

The consultant would obtain parcel-level tax assessors' data for all jurisdictions covered within the project corridor (defined as a one-mile buffer around the project alignment). The assessors' data should cover the most recent five years of information that are available. The consultant should determine key information from each jurisdiction including:

- The frequency at which reassessments are performed;

- Whether or not properties are assessed at full market value (and if not, the basis for performing the assessment);
- Any other known limitations or problems with the dataset or with the underlying assessment process.

**Caution:** There are numerous pitfalls that may be encountered in the process of acquiring and analyzing parcel-level data which are addressed in Appendix A of this document.

The consultant would analyze the data and report the following statistics for each station area or cluster, as well as summary statistics for all station areas:

- Total acreage and percent of station area land that is undevelopable. Examples of undevelopable lands may include transportation facilities, water, wetlands, steep slopes, parklands, or other environmentally-constrained areas. Undevelopable lands may be identified in some datasets as having a land value of zero, while vacant developable lands may have a positive land value but an improvement value of zero. For other municipalities, even undevelopable lands may be assigned a positive value. Also, some municipalities assign zero land value to all land off the tax rolls including institutions and government land which may be developed. Therefore it may be difficult or impossible to distinguish undevelopable land.
- Total acreage and percent of station area land that is vacant and developable. “Developable” land includes agricultural land, cleared property, and other undeveloped, unprotected land. This can be defined as land having a positive land value, but zero improvement value, considering the above caveats on the assignment of land values.
- Total acreage and percent of station area land that is considered underutilized and developable. For the purposes of this analysis, “underutilized” land is defined as having an improvement value to land value ratio (ILR) of greater than zero but less than 2.0.

The consultant would note the source of the data (agency), years of data, and any significant problems with the dataset (e.g., numerous missing or suspiciously high or low values, duplicate records, assessments not performed at market value). The consultant would report statistics from this analysis as illustrated in Table 2. The consultant would attach a map showing station areas with developable parcels identified as (1) undevelopable, (2) vacant, and (3)  $ILR < 2.0$ , and (4)  $ILR > 2.0$ .

**Table 2: Sample Reporting of Vacant and Underutilized Land (Template B-1, Table 1d)**

	Value	Benchmark Rating
Total land area within ½ mile radius (acres)	4,342	
Total undevelopable land area (ac.)	1,422	
% of total land	33%	
Total vacant and developable land area (ac.)	407	
% of total land	9%	Low
Total underutilized land area (ac.)	908	
% of total land	21%	High
Total vacant and developable or underutilized land area (ac.)	1,315	
% of total land	30%	Medium

Definitions:

Undevelopable: land value = 0 (definition may vary by jurisdiction)

Vacant: land value > 0, improvement value = 0

Underutilized: 0 < ILR < 2.0

Finally, the consultant would assign a “benchmark” rating of high, medium, or low based on the total percent of land across all station areas that are vacant or underutilized and developable. These benchmarks are shown in Table 3.

**Table 3: Benchmarks for Land Development Potential**

Indicator (% of station area land)	High	Medium	Low
% Vacant and developable	>20%	10 – 20%	<10%
% Underutilized	>20%	10 – 20%	<10%
% Vacant and developable or underutilized	>40%	20 – 40%	<20%

If parcel-level data are not available, the consultant would make a qualitative yet numerical estimate of the percentage of station area land that is vacant or obviously underutilized (e.g., large parking lots, older single-story industrial buildings) and appears developable, based upon visual inspection of station area aerial photographs and land use maps.

***Factor 1e - Build-Out or Market Analysis***

Build-out or market analysis results can be summarized as illustrated in Table 4. The consultant should indicate the source of the analysis (sponsoring and performing organizations), methodology, date, and any potential biases or limitations apparent in the analysis. Current levels of employment and population from Template B-1, Table 1c should be presented for comparison (these are linked in Template B-3, Table 1c).

To make comparisons across projects easier, the consultant would compute the following indicators:

- Total additional employment and population that are expected; and

- Average increase in population and employment densities (change in employees and population per square mile) in station areas. This “normalizes” the indicator across projects with different numbers of stations.

For converting square footage and dwelling units to population and employment, conversion factors of 250 square feet per employee for commercial uses (office and retail) uses and 2.0 persons per dwelling unit for residential uses should be used, unless local data are available.<sup>3</sup> Institutional square footage can be reported for informational purposes but should not be converted to employment unless specific local data are available.

**Table 4: Sample Reporting for Build-Out or Market Analysis (Template B-1, Table 1e)**

	Office (1,000 sq. ft.)	Retail (1,000 sq. ft.)	Inst. (1,000 sq. ft.)	Residential (DU)	Employment	Population
Current Level	15,744			7,646	37,184	21,072
Additional Build-Out Potential	4,510	1,130		8,300	22,562	16,600
% Increase vs. Current Level	36%			109%	61%	79%
Current Density (per sq. mi.)					4,042	2,290
Avg. Density Increase					2,452	1,804

## 2.2. Factor II. Transit-supportive Plans and Policies

The purpose of this factor is to evaluate the likelihood that land use plans and policies will lead to a more transit-supportive station area environment in the future. Characteristics of such an environment include:

- A complete and direct pedestrian network throughout the area;
- An environment in which the building and streetscape design encourages walking;
- A fine-grained mix of uses, including the availability of pedestrian-oriented retail and service uses in direct proximity to the station;
- Encouragement of alternative modes through parking management; and
- Residential and commercial densities that support pedestrian activity and transit ridership.

The rating is based primarily on an assessment of eight subfactors that were determined through a literature review to be some of the best indicators of a transit-supportive environment, and which can normally be assessed based on a review of local plans, zoning ordinances, and other policies affecting development. These subfactors include:

<sup>3</sup> The average household size in the U.S., based on the 2006 American Community Survey, is 2.61 persons. The recommended default of 2.0 persons per residential unit recognizes that station area development is likely to be primarily apartments and condominiums, which typically have lower occupancy than average. Modern office uses often require less than 250 square feet per employee, but retail typically requires more, so 250 is suggested as a representative value for mixed commercial development.

1. Pedestrian network coverage and connectivity;
2. Sidewalk availability;
3. Building setbacks;
4. Parking design;
5. Mix of uses;
6. Parking requirements;
7. Residential densities; and
8. Commercial densities.

The rating would also be based on an assessment of “implementation support activities” – i.e., the extent to which various barriers may exist to station area development, and the extent to which local agencies are undertaking actions to address those barriers. Barriers will usually fall into the following categories:

- Zoning classification and/or development review and permitting processes (e.g., zoning that requires single-use or low-density development, permitting processes that make it difficult to implement mixed-use);
- Land availability, acquisition, and/or assembly (smaller parcels are generally considered more difficult to develop, especially for major mixed-use, commercial, or residential projects that could significantly increase station area activity);
- Infrastructure improvements and financing mechanisms;
- Environmental cleanup and liability; and
- Poor market conditions (considering regional, subregional, and local markets).

Other local barriers may also be identified.

### **2.2.1. Information Required from Project Sponsors**

Project sponsors would provide the following information:

- a. A **description of recent, underway, and planned local and regional land use planning efforts** that will apply to station areas, including sponsor(s), objectives, process, products/outcomes, timeframe, and implementation mechanisms.
- b. Any **recent or proposed changes to station area zoning** (e.g., adoption of transit or pedestrian overlay districts, traditional neighborhood design standards, or rezoning for mixed-use), including details of proposed changes and expected timeline for adoption.
- c. An **inventory of relevant plans, policies, and ordinances**, including electronic or hard copies of relevant documents, or links to such documents. The types of documents considered in the review of plans and policies may include:
  - Regional transportation and land use plans that identify proposed station areas and establish land use and design policies for these areas.

- Local jurisdiction plans, including comprehensive plans, neighborhood plans, station area plans, and other policy plans that identify transit station areas and establish land use policies for these areas.
- Zoning and subdivision regulations that apply to transit station areas, including base zoning districts and overlay districts, as well as any proposed changes to regulations.
- Design guidelines that apply to new development in station areas.
- Institutional master plans that affect institutional development in station areas.

While conceptual plans (such as regional plans or station area concept plans) will be considered, primary emphasis will be given to adopted policies (especially those that specify development allowed by-right) as well as proposed future policies that directly regulate development in station areas.

- d. Identification of any **recently-completed, underway, or planned station area planning studies**, including market studies, that have identified barriers to station area development and recommended strategies for overcoming those barriers. Information should include:
- The timeframe over which it was (or will be) developed;
  - Who is leading the study and key organizations participating;
  - The process for conducting the study, including obtaining any stakeholder and public involvement;
  - The scope/breadth of the study, including issues addressed and stations to which the study applies; and
  - Actual or anticipated recommendations, and how they will be implemented.
- e. A brief narrative (typically one paragraph) for each of the following **potential barriers** to transit-supportive development, discussing whether this issue has been identified as a barrier locally, and if so, what actions are undertaken, planned, or recommended to overcome the barrier (including responsibility and proposed timeframe).
- Existing zoning, development review and permitting process (TOD not allowed by-right, excessive review times for development proposals, etc.);
  - Whether small parcels are likely to inhibit land acquisition and assembly;
  - Infrastructure deficiencies (street, water/sewer, etc.);
  - Environmental contamination, including need for cleanup and/or liability protection;
  - Weak market conditions that limit the commercial viability of higher-density, mixed-use development in station areas; and
  - Other factors noted.

The evaluation of implementation barriers can benefit greatly from a station area planning or market study that investigates barriers to transit-supportive development and recommends actions

required to overcome those barriers. This approach recognizes that different activities may be required or appropriate in different contexts.

It is not necessary for the project sponsor to conduct a detailed review of the various plans and policies and the extent to which the rating metrics described below for each subfactor are met. This review will be performed by the FTA consultant. However, if the project sponsor is familiar with local planning documents, it can be helpful for the sponsor to point out where important pieces of information may be found to ensure that the FTA consultant does not overlook relevant information. In addition, the FTA consultant may request that the project sponsor help to locate relevant information.

### **2.2.2. Tasks for the Consultant**

The consultant would:

- a. Provide a brief narrative (no more than 1 page) in Template B-1 summarizing the extent to which transit-supportive plans and policies have been developed or are in progress in the various local jurisdictions, including any station area planning activities as well as transit-supportive zoning ordinances.
- b. Provide a brief narrative (no more than 1 page) in Template B-1 describing evidence of the extent to which each local jurisdiction and major institution is implementing and enforcing transit-supportive design principles in new development.
- c. Review existing and proposed land use regulations, plans, and policies for each station area or cluster of neighboring station areas, and rate the eight subfactors according to a set of indicators and metrics as shown in Table 5. This should be done using the Template B-2 spreadsheet, with summary statistics reported in Template B-1 as shown in Table 6 and benchmarks assigned per Table 7. The approach to evaluating these subfactors is described in more detail later in this section.
- d. Comment in Template B-1 on the steps required for “proposed policies” to be implemented, the likelihood that this will happen, and the extent to which these policies are already being followed.
- f. Identify any studies that have identified barriers to station area development and recommended strategies for overcoming those barriers or meeting needs; and describe mechanisms for implementing recommendations.
- g. In Table 2f, briefly describe the extent to which each potential barrier is present in the proposed project station areas, as well as any committed or recommended actions to overcome the barrier. If possible, identify the approximate number of station areas in which the barrier may be significant. An example of this table is shown as Table 8. In this table, the consultant should provide the following indicators from an analysis of parcel and land use data:
  - Under “land availability,” indicate the average parcel size of station area parcels and the fraction of land area contained in parcels less than 10,000 square feet.
  - Under “environmental cleanup,” indicate the percentage of land in industrial use.
  - Also, in this table, the consultant should assign a qualitative rating (high, medium, low) to each barrier that describes the severity of the barrier, considering any

committed or recommended actions. Use the following guidance for assigning ratings:

- “High” = good (barrier is minor to non-existent, or committed actions should be sufficient to substantially overcome barrier);
- “Medium = mixed (barrier is moderate, or some actions have been committed);
- “Low” = poor (barrier is significant and proposed actions are not likely to be sufficient to overcome the barrier).

The benchmarks shown in Table 9 can be used to help guide the ratings for those barriers that have associated quantitative indicators.

**Table 5: Land-Use Plan and Policy Factors**

<b>Subfactor</b>	<b>Metric</b>
1. Pedestrian Network Coverage & Connectivity	A continuous pedestrian network is provided in the station area, with an average spacing of pedestrian connections of no more than 600 feet.
2. Sidewalk Availability	Sidewalks (minimum 8 feet wide in commercial areas containing street-fronting retail uses, 5 feet elsewhere) provided along all street frontage.
3. Building Setbacks	Setbacks along street frontages are no more than 15 feet for commercial/ mixed-use properties and no more than 20 feet for residential properties. <sup>1</sup>
4. Parking Design	No more than 30% of the street-fronting parcel length is for parking or automobile access/egress.
5. Mixed Uses	Vertical or fine-grained horizontal mixed-use development is allowed within the immediate station area (1/4 mile network walking distance).
6. Parking Requirements	Off-street parking requirements do not exceed the following thresholds: <ul style="list-style-type: none"> <li>• Office or mixed-use: 1.4 spaces/ 1,000 sq. ft. (CBD) or 3.0 spaces/ 1,000 sq. ft. (non-CBD); and</li> <li>• Retail: 3.4 spaces/1,000 sq. ft. (non-CBD); and</li> <li>• Residential: 1.2 spaces/unit (up to 2 bedroom, or general multi-family); 1.5 spaces/unit (3+ bedroom)</li> </ul>
7. Residential Density	Residential densities of at least 15 units per acre (lower threshold) or 25 units per acre (upper threshold). <sup>2</sup>
8. Commercial Density	Commercial densities of at least: <ul style="list-style-type: none"> <li>• 1.0 FAR (lower threshold) or 2.0 FAR (upper threshold) for stations in non-CBD areas;</li> <li>• 2.0 FAR (lower threshold) or 6.0 FAR (upper threshold) for stations in CBD areas.</li> </ul>

<sup>1</sup>A number of these metrics may be specified in zoning regulations as either minimum or maximum requirements. The specific interpretation of minimums vs. maximums for each metric is described in the detailed guidance provided below for each factor.

<sup>2</sup>The use of the “lower” and “upper” thresholds is described in more detail below.

**Table 6: Sample Reporting for Land Use Plans and Policies Summary Assessment (Template B-1, Table 2c)**

<b>Land Use Design and Density Metrics - Level Met</b>	<b>Adopted Policies</b>	<b>Proposed Policies</b>
<b>Percent at Least Meeting Level:</b>		
2 = Required	4%	24%
1 = Preferred (e.g., design guidelines recommend)	2%	13%
0 = Allowed (neutral/not specifically prohibited)	44%	60%
-1 = Not allowed	51%	4%
<b>Overall Average</b>	<b>- 0.42</b>	<b>0.57</b>
<b>Benchmark Rating</b>	<b>Low</b>	<b>Medium</b>

**Table 7: Benchmarks for Plans and Policies Evaluation (for Template B-1, Table 2c)**

	<b>High</b>	<b>Medium</b>	<b>Low</b>
Existing Regulations	> 0.75	0.0 – 0.75	< 0.0
Proposed Policies	> 0.75	0.0 – 0.75	< 0.0

**Table 8: Sample Reporting for Barriers Assessment (Template B-1, Table 2f)**

Barrier	Extent of Problem	Committed or Recommended Actions	Rating
Zoning classification and/or development review and permitting process	Most parcels with redevelopment potential are currently zoned for industrial or lower-density commercial uses.	The city has already adopted general TOD districts and has demonstrated its willingness to rezone parcels that are proposed for redevelopment. Therefore this is not seen as a major barrier.	High
Land availability, acquisition, and/or assembly	<p>This has been identified as a barrier in South Corridor station areas and is likely to be a consideration in the Northeast Corridor as well, although there are a number of large industrial or commercial parcels that may provide redevelopment potential without land assembly needs.</p> <p><u>Avg. size of parcels:</u> 47,300 sq. ft.</p> <p><u>Benchmark rating:</u> High</p> <p><u>% of land on parcels &lt; 10,000 sq. ft.:</u> 6.6%</p> <p><u>Benchmark rating:</u> High</p>	The City has allocated capital funds for acquisition of land for transit-oriented development in South Corridor station areas, and intends to further apply this to the Northeast Corridor. The extent to which available funding will be sufficient to meet needs is unknown.	High
Environmental cleanup and/or liability protection	<p>Stations 1 – 5 are located along an existing freight corridor with industrial land uses. Cleanup is likely to be a significant issue in these areas.</p> <p><u>% of land in industrial use:</u> 19.9%</p> <p><u>Benchmark rating:</u> High</p>	State tax incentives are available for brownfields cleanup. City funds may also be made available. The extent to which such funds may be made available, or needed, in the Northeast LRT Corridor is unknown.	Med/ High
Infrastructure improvements and financing mechanisms	Improvements to the local infrastructure, including new street and pedestrian connections as well as additional sidewalks and crossings, will be needed in most station areas.	The city has demonstrated its willingness to fund such improvements in existing station areas. The extent to which funding will be available to meet needs is unknown. In one greenfield area, developers have contributed to local street extensions/improvements.	Med.
Poor market conditions	A recent market study noted retail abandonment and little housing momentum in the “first ring suburban” areas. The market is somewhat stronger in the university area. Five stations were identified with relatively strong potential, while eight were identified as “second-tier” locations requiring public incentives, significant infrastructure improvements, and/or parcel assemblage needed to spur TOD.	As previously identified (rezoning, public infrastructure improvements, and other incentives may be utilized)	Low
Other issues (describe)			

**Table 9: Benchmarks for Barriers Indicators (for Template B-1, Table 2f)**

	<b>High</b>	<b>Medium</b>	<b>Low</b>
Average parcel size (square feet)	> 25,000	10,000 – 25,000	< 10,000
Percent of land on parcels less than 10,000 square feet	< 20%	20 – 40%	> 40%
Percent of land in industrial use	< 20%	20 – 40%	> 40%

***Factor 2c - Assessment of Plans and Policies Subfactors***

Task (c), assessment of the eight plans and policies subfactors, would include the following steps. This assessment can be accomplished using the spreadsheet tools provided in Template B-2.

- The consultant should create an inventory of applicable plans and policies. Information in this inventory should include the sponsoring agency; station area(s) to which the document is applicable; date of adoption or current status (under development, public review draft released, etc.); and enforceability. Enforceability can be rated as required (i.e., adopted in municipal ordinance), recommended (adopted as municipal policy, but not legally binding), or conceptual (proposed but not adopted as municipal policy). Recommended policies may affect the ratings (as described in the detailed guidance given below), but conceptual documents will not. An example of such an inventory is shown in Table 10.
- The consultant would complete a matrix in Template B-2 assessing the applicability of each of the subfactors by station area, considering adopted policies regulating development. For each subfactor and station area, one of four rating levels should be assigned:
  - Required (+2) – Policies require the metric to be met;
  - Recommended (+1) – Policies recommend or provide incentives for the metric to be met;
  - Neutral (0) – Policies allow the metric to be met, but do not provide specific incentives for encouraging this;
  - Not allowed (-1) – Policies prohibit the metric from being met.

In unusual cases, the reviewer may choose to assign fractional ratings; for example, if a level is met for one half of the station area, but not for the other half. If information is not available to support rating a specific subfactor, the cell should be left blank.

- This rating process would be repeated for proposed policies which are not yet adopted. The goal of this two-stage rating is to account for the greater certainty associated with adopted policies being implemented, while at the same time recognizing progress that is being made towards developing appropriate new policies in anticipation of the proposed transit project.
- In the consultant template to FTA, the consultant would make notes of any other relevant information or considerations – for example, evidence provided by the project sponsor supporting the assertion that plans and policies are being followed; evidence that suggests that plans and policies are not being implemented; or evidence on the quality and extent of public involvement in creating the plan.

**Table 10: Example of Plans and Policies Inventory**

<b>Plan/ Policy Document</b>	<b>Sponsoring Agency/ Institution</b>	<b>Applicable Station Areas</b>	<b>Status &amp; Date of Adoption</b>	<b>Implementation/ Enforcement</b>
<b>Ordinances</b>				
Charlotte Zoning Code	City of Charlotte	All	Ongoing	Required
<b>Comprehensive, Small Area, and Other Adopted Plans &amp; Policies</b>				
2015 Plan	Charlotte - Mecklenburg Plng. Comm.	All	1997	Recommended
2025 Integrated Transit/Land Use Plan	Charlotte - Mecklenburg Plng. Comm.	All	1998; update underway as of 9/07	Recommended
First Ward Master Plan	City of Charlotte	1	1997	Recommended
Center City 2010 Vision Plan	City of Charlotte	1	2001	Recommended
University City Area Plan	City of Charlotte	9 - 12	2007 (pending adoption)	Recommended
Transit Station Area Principles	City of Charlotte	All	2001	Recommended
Urban Street Design Guidelines	City of Charlotte	All	2007 (draft)	Recommended
<b>Institutional Master Plans</b>				
University of North Carolina - Charlotte Campus Master Plan	UNC – Charlotte	12	1995/2000	Recommended
<b>Conceptual Plans</b>				
Station Area Concepts	Charlotte - Mecklenburg Plng. Comm.	All exc. 1, 12	2006	Conceptual

***Guidance on Adopted Policies***

The “Adopted Policies” rating matrix would be completed based only on conditions that are established in the following types of documents:

- Adopted local zoning and subdivision ordinances (including overlay districts that have been applied to the specific station area being evaluated and other special districts);
- Other adopted plans and policies (e.g., small-area plans, design guidelines, or institutional master plans) that establish legally-binding requirements for development;
- Some subfactors can achieve a “recommended” rating (+1) based on policies that may be stated in other adopted policy documents, such as design review guidelines pertaining to a specific station area. Such cases are indicated in the guidance for assigning ratings below.

The following would not be rated in the Adopted Policies matrix:

- Proposed zoning changes;

- Overlay districts that have been adopted as options in the zoning code but not yet been applied to station area properties;
- Documents such as neighborhood plans, station area plans, general transit-supportive design guidelines, or other conceptual documents that provide general guidance for desired development but do not encode this guidance through municipal ordinances or other binding mechanisms.

### ***Comments on Proposed Policies***

The “Proposed Policies” rating matrix would be completed based only on conditions that the local jurisdiction or other land use governing authority has proposed as policies to regulate land use in the station areas in question. Proposed policies that have not yet been adopted for the specific station area would be considered if they are developed to the point where a draft has been released for public review (e.g., a draft proposed small-area or neighborhood plan), or if they have been adopted as general policies by the jurisdiction (e.g., a comprehensive plan designating policies for transit station areas). Examples of sources of proposed policies may include:

- Comprehensive, neighborhood, or small-area plans that have been adopted or proposed for public review, recommending that specific design policies be applied to transit station areas through changes to zoning or other mechanisms;
- Zoning overlay districts that have been adopted or proposed for public review, but not yet applied to the proposed station areas;
- Changes to baseline zoning that have been proposed for public review, but not yet applied to the proposed station areas; and
- Design guidelines that would apply to the specific station area and have been proposed for public review.

Conceptual station area plans, general design guidelines developed by regional agencies, or other documents whose recommendations have not been endorsed or proposed for adoption by the local governing body as official jurisdictional policy governing land use would not be considered.

### ***Comments on Spatial Extent***

FTA typically reviews transit-supportive land use policies and patterns for an area within a ½ mile radius of proposed stations. For this assessment, the reviewer might focus on a ¼ mile radius. Zoning and design requirements typically vary across a station area, and limiting the geographic focus of the review to ¼ mile might assist the reviewer in determining whether existing and proposed plans and policies meet the specific metrics described. Where there are different zoning districts within a single station area, primary emphasis should be placed on:

- The more predominant zoning districts;
- Commercial corridors and other major streets that provide the most direct access to the station; and
- Zoning districts covering properties with the greatest potential for redevelopment/change.

When thresholds are met for some significant uses but not others, fractional ratings could be assigned (e.g., +0.5, -0.5).

### ***Description of Subfactors, Metrics, and Ratings***

This section provides details about how the eight land use plans and policies subfactors could be rated.

#### ***Subfactor 1: Pedestrian Network Coverage & Connectivity***

**Metric:** There exists, or plans specify, a continuous pedestrian network in the station area, with an average spacing of pedestrian connections of no more than 600 feet.

#### **Ratings:**

Required (2):

Area plan includes public network connections meeting spacing criteria and/or requirements for accessible connections within private developments;

OR, a network meeting the criteria already exists (and there are no major redevelopment plans that would eliminate blocks)

Recommended (1):

Adopted policies recommend a continuous pedestrian network meeting spacing criteria

Neutral (0):

Network connectivity not required or recommended

Not Allowed (-1):

Existing street/parcel layout precludes network connectivity;

OR, area plan shows network not meeting spacing requirements

#### **Comments:**

- For undeveloped areas, refer to area master plans or development policies. For developed areas, use GoogleEarth, a GIS program, or a map and ruler to measure typical block lengths in the vicinity of the transit station. A “block” can be defined by 24-hour publicly-accessible pedestrian passages, as well as streets. Parking lots do not count unless there is a defined pedestrian route, primarily separated from traffic, that traverses the lot.
- If there is a mix of block lengths, some less than and some exceeding the 600-foot threshold, use the following approach: With a path measurement tool, measure the perimeter of the four blocks located closest to the transit station (i.e., those with any part of the block closest to the station). Compute the average block face length by dividing the total perimeter of all four blocks by the total number of block faces (usually 16).

### *Subfactor 2: Sidewalk Availability*

**Metric:** Sidewalks (minimum 8 feet wide in commercial areas containing street-fronting retail uses, 5 feet elsewhere) provided along all street frontage.

#### **Ratings:**

Required (2):

Sidewalks required for new development

Recommended (1):

Adopted policies recommend sidewalks for new development

Neutral (0):

Sidewalks not required or recommended

Not Allowed (-1):

Sidewalks discouraged or prohibited (not likely to be assigned)

#### **Comments:**

- If the area is already covered by a publicly-maintained sidewalk system and there is clear evidence that the city either provides or requires sidewalks in conjunction with new development, a (+1) rating may be assigned even if sidewalk provision is not explicitly addressed in the zoning code or other municipal ordinances.
- Google's Streetview program allows for two-dimensional viewing of some metropolitan areas at street level, in effect allowing one to drive the streets. This tool may be helpful in identifying the existence of sidewalks and pedestrian connections.

### *Subfactor 3: Building Setbacks*

**Metric:** Setbacks along street frontages (distance from the front of the building to the lot line) are no more than 15 feet for commercial or mixed-use properties and no more than 20 feet for residential properties.

#### **Ratings:**

Required (2):

Maximum setbacks (as specified in zoning or binding design guidelines) are less than thresholds

Recommended (1):

Setbacks may be less than or greater than thresholds; setbacks less than the threshold are recommended in adopted policy or plan documents or design guidelines

Neutral (0):

Setbacks may be less than or greater than thresholds; no guidance specified in policy or plan documents or design guidelines

Not Allowed (-1):

Minimum setback requirements are greater than the thresholds

**Comments:**

- If the setback condition is met for some uses but not others, see the guidance above under “spatial extent.”
- Setback requirements will generally be found in the section of zoning pertaining to a specific type of use (residential, commercial, etc.) Different setback requirements may also be specified for overlay districts (e.g., pedestrian or transit overlay).
- It may not be possible to rate this factor for institutional areas (e.g., college or hospital campuses) as the traditional concept of a setback from the street may not be meaningful in a campus environment.

*Subfactor 4: Parking Design*

**Metric:** No more than 30% of the street-fronting parcel length is for parking or automobile access/egress.

**Ratings:**

Required (2):

Zoning code establishes this or a functionally similar requirement (e.g., parking must be in structures or behind building)

Recommended (1):

Design guidelines adopted for this area include this or functionally similar recommendation

Neutral (0):

Location and design of parking not specified

Not Allowed (-1):

Parking is required in front of buildings (not likely to be assigned)

**Comments:**

- This metric is intended to focus on parking for newly-built commercial, mixed-use, or multi-family structures. Except for districts with special design standards, such as transit or pedestrian overlay districts, most zoning codes will not specify the location of parking for these types of uses. Some zoning codes prohibit parking in the front yards of residential lots, but this alone should not justify a positive rating for this factor.
- Institutional master plans may be rated for this factor based on the extent to which parking is planned to be in structures vs. surface lots. For example, a (2) rating could be assigned for master plans that call for all new future parking supply to be accommodated in structures and for redevelopment of surface lots with buildings.

*Subfactor 5: Mixed Uses*

**Metric:** Vertical or fine-grained horizontal mixed-use development is allowed within the immediate station area (1/4 mile network walking distance).

**Ratings:**

Required (2):

An approved development plan for the station area requires mixed-use development in the immediate station vicinity

Recommended (1):

Station area zoning includes an explicit category for “mixed-use development”; OR  
Station area zoning allows multiple uses (as defined under “comments”) in the same zoning district, AND design guidelines or area master plans encourage mixed-use development

Neutral (0):

Station area zoning allows multiple uses in the same zoning district, but area master plans or design guidelines do not specifically encourage it

Not Allowed (-1):

Zoning in the immediate station vicinity does not allow mixed-use development or multiple uses

**Comments:**

- Mixed use may include vertical and/or horizontal mixing. Vertical mixing means that a single building incorporates multiple uses. Horizontal mixing means that abutting buildings may be different uses.
- Zoning supporting mixed-use development should allow the following types of uses by-right:
  - Multi-family residential
  - General retail (may be limited to small-scale/neighborhood retail, with large-scale retail established as conditional uses or prohibited. Auto-oriented uses such as drive-thrus and gas stations may be prohibited)
  - Commercial, including professional office (residential mixed-use zones may include restrictions on large-scale office uses)
- Office buildings with a private cafeteria or convenience shop are not considered mixed-use.
- It may be difficult to rate this factor for an institutional environment. A (1) rating might be assigned for a campus master plan that specifies student housing placed in close proximity to academic buildings and for inclusion of retail uses in campus buildings. Institutional uses alone are not considered to be mixed-use.

### *Subfactor 6: Parking Requirements*

**Metric:** Off-street parking requirements should not exceed the following thresholds:

- Office or mixed-use - 1.4 spaces/ 1,000 sq. ft. (CBD) or 3.0 spaces/ 1,000 sq. ft. (non-CBD); and
- Retail - 3.4 spaces/1,000 sq. ft. (non-CBD); and
- Residential - 1.2 spaces/unit (up to 2 bedroom, or general multi-family); 1.5 spaces/unit (3+ bedroom)

**Ratings:**

Required (2):

Maximum parking requirements are established and are less than or equal to the thresholds

Recommended (1):

Minimum parking requirements are less than the thresholds;

AND maximums (if established) are greater than the thresholds;

AND incentives (such as density bonuses) are provided for providing parking at less than the threshold levels

Neutral (0):

Minimum parking requirements are less than the thresholds;

AND maximum parking requirements (if established) are greater than the threshold

Not Allowed (-1):

Minimum parking requirements are greater than threshold levels

**Comments:**

- If parking requirements are met for some uses but not others, see the section above under “spatial extent.”
- Off-street parking requirements are generally contained within their own subsection of the zoning code. Special districts and overlay districts should also be checked for their own specific requirements.

### *Subfactor 7: Residential Density*

**Metric:** Residential densities of at least 15 units per acre (lower threshold) or 25 units per acre (upper threshold) are allowed.

**Ratings:**

Required (2):

Minimum density requirements have been established that are greater than the upper threshold (25 units/acre).

Recommended (1):

Maximum densities are greater than the upper threshold (25 units/acre);  
AND minimum density requirements have been established that are greater than the lower threshold (15 units/acre).

Neutral (0):

Maximum densities are greater than the upper threshold;  
AND minimum densities (if any) are less than the lower threshold.

Not Allowed (-1):

Maximum densities are less than the upper threshold.

**Comments:**

- Density thresholds are expressed in units per net acre (i.e., parcel density rather than area-wide density), which is the measure typically found in zoning regulations.
- If density thresholds are met for some uses but not others, see the section above under “spatial extent.”
- For residential areas zoned based on minimum lot size per dwelling unit, convert to maximum units per acre by dividing 43,560 (the number of square feet per acre) by the minimum lot size per unit (expressed in square feet). Ignore any additional constraints posed by setback, height limit, or covered lot area requirements. Note that 15 units per acre corresponds to a minimum lot size of 2,900 square feet per unit, while 25 units per acre corresponds to a minimum lot size per unit of 1,740 square feet per unit.
- For residential or mixed-use areas zoned based on floor area ratio (FAR), follow the commercial density thresholds established in factor 8.

*Subfactor 8: Commercial Density*

**Metric:** Commercial densities of at least:

- FAR (lower threshold) or 2.0 FAR (upper threshold) for stations in non-CBD areas;
- FAR (lower threshold) or 6.0 FAR (upper threshold) for stations in CBD areas.

**Ratings:**

Required (2):

Minimum density requirements have been established that are greater than the upper threshold

Recommended (1):

Maximum densities are greater than the upper threshold;  
AND minimum density requirements have been established that are greater than the lower threshold

Neutral (0):

Maximum densities are greater than the upper threshold;

AND minimum densities (if any) are less than the lower threshold

Not Allowed (-1):

Maximum densities are less than the upper threshold

**Comments:**

- If density thresholds are met for some uses but not others, see the section above under “spatial extent.”
- Do not consider the effects of any density bonuses that may be available.

***Other Issues***

The reviewer might find it helpful to make a more detailed inventory of plans and policies as well as existing and proposed zoning districts. Table 11 shows an example of a zoning inventory. The zoning inventory lists the zoning districts predominately found in station areas; identifies which stations they are found in (as a more or less predominant district); and identifies what the zoning district requires in respect to each factor. This same format could also be used to keep track of how individual plan and policy documents address the various factors.

***Summary Reporting***

The following summary ratings are automatically calculated by Template B-2 and would be reported in Table 2c of Template B-1:

- Average score, for both “adopted” and “proposed” policies (minimum of -1, maximum of +2);
- Percent of subfactors meeting the various rating thresholds (-1, 0, +1, +2), for both “adopted” and “proposed” policies; and
- Benchmark rating for average scores.

**Table 11: Example of Zoning District Inventory**

District	Description	Station <sup>1</sup>					Factors									
		1	2	3	4	etc.	1. Ped Network	2. Sidewalk Avail.	3. Setbacks	4. Mixed Use	5. Parking Design	6a. Res. Parking	6b. Comm. Parking	7. Res. Density (du/ac)	8. Comm. Density (FAR)	
<i>Primary</i>																
R1A	Single-family			<b>X</b>				Req'd	Min >25'	No		Min 1.0 spc/unit		Max 8.6		
R4	Multi-family – medium density		<b>X</b>	<b>X</b>				Req'd	Min >25'	No		Min 1.0 spc/unit		Max 29		
R6	Multi-family - high density		<b>X</b>		<b>X</b>			Req'd	Min >25'	No		Min 1.0 spc/unit		Max 48		
OR2	High-density office-residential		<b>X</b>	<b>X</b>	<b>X</b>			Req'd	Min >20'	Yes (nghbhd retail, residential)		Min 0.9 spc/unit	Min 3.3 spc/ 1000 sq ft	Max 61	Max 2.5	
C1	Neighborhood commercial				<b>X</b>			Req'd	Min >10'	Yes (residential)		Min 1.0 spc/unit	Min 3.3 spc/ 1000 sq ft	Max 48	Max 1.7	
I1, I2	Light, medium industrial	<b>X</b>		<b>X</b>	<b>X</b>			Req'd	Min >20'	No			Min 3.3 spc/ 1000 sq ft		Max 2.7	
B4-1,2	Downtown	<b>X</b>						Req'd	Max <10'	Yes	1 <sup>st</sup> floor uses req'd	Min 0.9 spc/unit	Min 0.7 spc/ 1000 sq ft	See comm FAR	Max 8-16+ bonuses	
<i>Overlays</i>																
PO	Pedestrian-oriented overlay			<b>X</b>	<b>X</b>			Req'd	Max <10'	n/a	Prohib. in front of bldg		Max = 150% of min 25% redux for transit	30% bonus in transit area	Min 1.0 in transit areas; 30% bonus on max	

<sup>1</sup>Bold **X** = significant/dominant use; unbold X = lesser/incidental use

### 2.3. **Factor III – Economic Climate**

The purpose of the economic climate factor is to assess the economic health of the region and corridor and the extent to which economic conditions are likely to support additional growth in station areas. The assessment of this factor would include a review of various short-term and long-term regional, corridor, and station area economic indicators; a qualitative assessment of the extent to which market conditions support transit-oriented development; and a review of recent and proposed transit-supportive development projects in station areas, demonstrating actual local market conditions.

Each of the various indicators recommended for use in this assessment has its own strengths and weaknesses. All of them suffer from the uncertainties inherent in forecasting future economic conditions, which may change for reasons that are difficult or impossible to foresee. Long-term forecasting in particular is uncertain. While current indicators may provide relatively good assessment of conditions within the next two or three years, they may bear little or no relationship to conditions at the time of the transit project construction, which may be five to 10 years in the future. With these limitations in mind, the rationale for including each, and limitations of the indicator, are discussed below.

- **Forecast metropolitan area growth (population and employment)** – Long-term (20+ year) growth forecasts are produced by all metropolitan areas, usually by the MPO or other regional planning agency, and therefore represent a consistent base of comparison across projects. Growth rates should directly correlate to the demand for new floorspace in the region, and therefore to the potential demand for new development in station areas. However, long-term forecasting is inherently speculative and these forecasts are typically based on past and recent trends which may not continue. Also, forecasts may sometimes be politically-driven and therefore more optimistic than conditions might warrant.
- **The average annual growth in station area and corridor property values**, measured over the most recent five years or other available time period, can indicate the extent to which the local market for development is improving. It is possible that some of this growth is directly related to speculation in advance of the transit project – suggesting an influence on development patterns. (This can be further assessed by comparing station area with broader corridor or regional growth rates.) The quality of the data available for measuring property values varies widely, however. Sales data are the truest indicators of market value, but may not be easy to obtain and are generally reliable only for residential properties. Furthermore, there may not be enough transactions to reliably observe values at a station area level. Tax assessment data is generally widely available for all properties. However, assessments may not be performed every year, and may not be performed at market value in some states that have restrictions on property tax increases. Furthermore, assessments are subjective in nature and depend upon finding comparable properties with sales information.
- **Commercial floorspace asking rents** may indicate the imbalance between demand and supply for floor space, with higher rents suggesting that building may be more financially lucrative. However, even some rapidly-growing metropolitan areas have relatively modest rents if they have substantial land supply available. Furthermore, rents may change relatively slowly as a result of long-term leases. The best use of this indicator may be to show the demand for high-density development as indicated by a scarcity of

floor space evidenced by high rents. Class A rents for office space are selected as the preferred commercial indicator, as they are widely available for most metropolitan areas and also are representative of the type of use that might be expected in new buildings near transit. A comparison of CBD with suburban rents is recommended, given the key role of most transit projects in serving the CBD job market.

- The **median price of owner-occupied housing units** is hypothesized to relate to the demand for housing in a metropolitan area, and in particular the demand for higher-density housing (i.e., more transit-supportive) as evidenced by a scarcity of land that drives up housing prices. Prices may be compared separately for single-family and condominium units if available, since condominiums are more representative of the type of development that should be promoted in transit station areas. Median apartment rents are not included because there is no widely available, consistent source of data on rents at a metropolitan area level.
- The **average station area land value**, expressed in dollars per square foot, is another indicator of the scarcity of land and therefore the potential for higher-density development. This indicator is based on tax assessment data that distinguishes land and improvement values. One drawback is that land values can be difficult to observe accurately, since few transactions of undeveloped land may be available in built-up areas; therefore, assigning a land value is left to the judgment of the tax assessor.
- The **percentage of new residential building permits that are multi-family** provides a direct indicator of the extent to which a market for higher-density housing exists in the region.
- **Commercial floorspace vacancy rates** indicate the current availability of floorspace, and hence the potential demand for new development.
- **Absorption** (change in occupied space over a given time period) is another common economic indicator. It was not selected for use here because of the difficulty of normalizing absorption rates (which are expressed in absolute square footage terms) across projects.

### 2.3.1. Information Required from Project Sponsors

Project sponsors would provide or make reference to sources of the following information in Template A-1:

- a. Recent market studies, completed as part of the corridor planning process or for other purposes, that have examined regional, corridor, and/or CBD data on factors including:
  - Office rents and vacancy rates for Class A office space;
  - Median single-family home and condominium sales prices; and
  - Fraction of residential building permits issued that are for multi-family units.
  - If a recent local market study has not been completed, data may be available from national sources that can be obtained by the consultant.
- b. Information on major development projects completed within the past five years, under construction, or proposed in station areas. Information submitted may include news clippings, links to web sites, project descriptions, site plans, conceptual renderings, or

institutional capital improvement programs. Optionally, the project sponsor may choose to summarize this information in an inventory listing each project, its location, the size of the project (sq. ft. by use type, residential units, hotel rooms, etc.), actual or proposed completion date and/or start of construction, and any descriptive information such as height, street orientation, etc.

- c. (Optional) a narrative providing additional evidence supporting the assertion that transit-supportive planning efforts have been successful, and/or that a strong local market exists for transit-supportive development (e.g., market studies, recent local infill/redevelopment activity, indications of developer interest).

### **2.3.2. Tasks for the Consultant**

The consultant would provide in Template B-1:

- a. A brief narrative (no more than one page) summarizing evidence regarding the strength of the local market to support transit-supportive development.
- b. A completed Table 3b of economic indicators, such as shown in Table 12, including references to data sources. Benchmark ratings (high, medium, low) should be assigned for each indicator, per the guidance provided in Table 13. More guidance on researching indicators is provided below. Calculations for metropolitan and corridor growth indicators can be obtained using Template B-3, Table 1c. Other indicators will be developed by the consultant based on an analysis of tax assessment and available sales data as obtained for Factor I.
- c. A summary (Table 3c) of recently completed (past five years), under construction, and proposed development in proposed station areas, as shown in Table 14. Corresponding increases in population and jobs should be estimated per the guidance provided below. Benchmarks should be assigned based on the amount of activity increase (population and jobs) associated with this development, per the guidance provided in Table 15. This summary table should be based on a detailed inventory of projects, which can be done using Template B-3. More guidance on inventorying development is provided below.

**Table 12: Sample Reporting for Economic Indicators (Template B-1, Table 3b)**

Indicator	Time Period	Value	Benchmark Rating*
<b>Growth Indicators</b>			
MPO projected regional growth (% per year)			
Population	2000 - 2030	1.0%	Medium
Employment	2000 – 2030	1.0%	Medium
MPO projected corridor growth (% per year)			
Population	2000 – 2030	0.5%	Low
Employment	2000 – 2030	0.7%	Low
Average annual growth in values (5-year preferred)			
Average assessed station area land value per sq. ft.	2002 - 2006	6.4%	Medium
Median assessed station area land + improvement value	2002 – 2006	10.9%	High
Corridor median home sales prices	2002 – 2006	7.0%	Medium
<b>Price Indicators</b>			
Median class A office rent (3-year average preferred)			
Metro area	2003 - 2005	\$21.56	Low
Downtown	2003 – 2005	\$22.23	Low
Median price of owner-occupied housing units (3-year average preferred)			
Metro area - single-family	2004 - 2006	\$214,000	Medium
Metro area – condominium	2004 – 2006	\$165,000	Medium
Average station area land value (\$/sq. ft.)	2006	\$8.96	Medium
<b>Other Indicators of Supply and Demand</b>			
New residential building permits: % multi-family (5-year average preferred)	2000 – 2005	47.3%	Medium
Class A vacancy rates (3-year average preferred)			
Metro area	2003 – 2005	8.7%	High
Downtown	2003 – 2005	9.3%	High
<b>Indicators of Station Area Health Relative to Corridor</b>			
Ratio of average station area to corridor land value per sq. ft.	2006	1.30	Medium
Ratio of station area to corridor average annual growth in average assessed land values per sq. ft.	2002 – 2006	0.96	Medium

\*A “high” rating is always “good”, i.e., more likely to support development.

**Table 13: Benchmarks for Economic Indicators (for Template B-1, Table 3b)**

<b>Indicator</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
Forecast annual growth in regional and corridor population and employment	>1.5%	0.75 - 1.5%	<0.75%
Annual growth in property value	>10%	5 – 10%	<10%
Median class A office rent	>\$27.50	\$22.50 - \$27.50	<\$22.50
Median price of single-family or all owner-occupied housing units (3-year average)	>\$300,000	\$200,000 - \$300,000	<\$200,000
Median price of condominium housing units (3-year average)	>\$250,000	\$150,000 - \$250,000	<\$150,000
Average station area land value (\$/sq. ft.)	>\$15.00	\$7.50 – 15.00	<\$7.50
% of new residential building permits that are multi-family	>60%	40 – 60%	<40%
Class A vacancy rate	<10%	10 – 15%	>15%
Ratio of station area to corridor assessed values or growth in assessed values	> 1.5	0.75 – 1.5	< 0.75

**Table 14: Sample Reporting for Development Activity Indicators (Template B-1, Table 3c)**

<b>Type of Development</b>	<b>Existing</b>	<b>Completed/ Underway</b>	<b>Planned/ Proposed</b>
<b>Total Development</b>			
Residential (units)		800	2,300
Office (sq. ft.)		--	1,700,000
Retail (sq. ft.)		140,000	840,000
Institutional (sq. ft.)		n/a	n/a
Hotel (rooms)		129	--
<b>Estimated Total Activity</b>			
Jobs	84,486	600	10,000
Population	59,123	1,500	4,500
<b>% Increase vs. Existing</b>			
Jobs		0.7%	11.9%
Population		2.6%	7.6%
<b>Avg. Activity or Increase (per sq. mi.)</b>			
Jobs	8,155	40	750
Population	5,707	120	340
<b>Benchmark Rating for Avg. Activity Increase</b>			
Jobs		Low	High
Population		Medium	Medium

**Table 15: Benchmarks for Current Development Activity (for Template B-1, Table 3c)**

Activity Increase (per sq. mi.)	High	Medium	Low
<i>Projects Underway or Completed in Past 5 Years</i>			
Population	> 500	100 - 500	< 100
Jobs	> 500	100 - 500	< 100
<i>Proposed Projects</i>			
Population	> 500	100 - 500	< 100
Jobs	> 500	100 - 500	< 100

**Item 3b – Economic Indicators**

Unless already provided by the project sponsor, the consultant should obtain and review national sources of data on economic conditions for the market area in question. Profiles are developed for most major U.S. markets by at least three companies:

- Colliers Arnold publishes national summary reports including rents, vacancy rates, inventory, and absorption for office (all inventory and class A) in major metropolitan areas, broken down by CBD and suburban submarkets; individual quarterly metro area reports including five quarters of historical data and some submarket detail; and individual end-of-year (4th quarter) metro area reports including five years of historical data. Current reports may not be available for all markets. This source is currently the most comprehensive of the available sources. See: <http://www.colliers.com/Corporate/MarketReports/UnitedStates/>
- Grubb-Ellis publishes reports that include vacancy rates, absorption, and rents for metropolitan areas, CBDs, and some submarkets. Data are currently available for the most recent quarter only. A summary report compares asking rents and vacancy rates across CBDs. See: <http://www.grubb-ellis.com/research/reports.aspx>
- CB Richard Ellis publishes quarterly reports include office vacancy rates, lease rates, absorption, rentable area, and new construction square footage, for various metropolitan area submarkets. Typically a five or six quarter history is provided. See: <http://www.cbre.com/USA/Research/>

Data on the median price of owner-occupied housing units can be obtained from two sources:

- The National Association of Realtors (NAR). NAR publishes both single-family and condominium sales prices, but not all markets are covered. See: <http://www.realtor.org/Research.nsf/Pages/MetroPrice>
- The American Community Survey (ACS), accessed through the Census Bureau’s American Factfinder website. The ACS has been expanding its coverage and now includes most major U.S. markets. See: <http://factfinder.census.gov/>

- The following indicators should be computed using the parcel-level tax assessor data obtained for Factor I:
  - Average annual growth rates in station area and corridor property values, preferably over the most recent five-year period available. Growth rates for three specific indicators should be calculated:
    - Average assessed station area land value per square foot (total station area land value divided by total station area land square footage);
    - Median assessed station area land plus improvement value; and
    - Corridor median home sales price.

Sales data may not be included in the tax assessor’s database, but some cities maintain their own data on property sales or can obtain such data through private services such as the Multiple Listing Service (MLS). Appendix A provides more detail on data sources and specific methods for calculating these indicators.

- Average station area land value (dollars per square foot) – the total value of developable station area land (i.e., land with non-zero value) divided by the total square footage of this land, for the most recent year available.
- Ratio of station area to corridor average assessed land values, and the ratio of annual growth rates in station area vs. corridor average assessed land value. The “corridor” should be defined as all property with centroids falling within a one-mile buffer of the proposed alignment. Again, more information on calculating these indicators is provided in Appendix A.

***Item 3c - Development Inventory***

The following guidelines apply to the development inventory illustrated in Table 14:

- “Completed/underway projects” should include all known projects completed within the past five years.
- “Planned/proposed projects” should include only building projects with specific proposals submitted by a developer. Area master plans that do not include specific development proposals with a committed project owner should not be included.
- The total activity associated with this development should be estimated using conversion factors of 250 employees per square foot and 2.0 residents per dwelling unit, as described for Factor I. This increase should be normalized (activity increase per square mile) by dividing by the total land area within a ½-mile radius of proposed stations.

## APPENDIX A - ANALYSIS OF PARCEL DATA

This Appendix provides guidance on obtaining and analyzing parcel-level data, including tax assessor, sales, and land use data, to create quantitative indicators of economic development potential that are required in Template B-1. This task is to be performed by FTA's consultant, with assistance from the New Starts project sponsor in obtaining data from local agencies.

### **Required Data**

Four basic types of data are required – transit data, tax assessment data, land use data, and sales data. The specific data elements required include:

- Transit data:
  - Shapefile of proposed new transit station stops;
  - Shapefile of the proposed new transit centerline;
- Tax assessment data – Shapefile of all parcels in municipalities overlapping the corridor (defined as a one-mile buffer around the proposed new sections of the transit alignment) from the most recent five assessment years including:
  - Parcel size;
  - Assessed land value;
  - Assessed improvement value;
  - Land use OR parcel identification number AND separate land use database;
  - Sales data OR parcel identification number AND separate sales database;
- Land use data – Land use database of all parcels in municipalities overlapping the corridor from the most recent year including:
  - Parcel identification number;
  - Land use designation;
- Sales data – Sales database of all parcels in municipalities overlapping the corridor from the most recent five years including:
  - Sales price for each sale made for each parcel;
  - Sales date;
  - Parcel identification number.

Table A-1 shows which data are required for which indicators. Most indicators require only the transit and tax assessors' data, including parcel size and assessed land and improvement values. Parcel identification numbers are also required to link to separate land use or sales databases. As further discussed below, land use and sales data may be omitted if they cannot be readily obtained at minimal cost.

**Table 16: Data Requirements by Indicator**

Indicator	Transit Shapefiles	Parcel Shapefile w/ Assessments Data	Land Use Database by Parcel	Sales Database by Parcel	Geog. Scope
<b>Descriptive Statistics</b>					
All station area parcels (ac.)	X	X			Station Area
Undevelopable station area parcels (ac.)	X	X			Station Area
Vacant and developable station area parcels (ac.)	X	X			Station Area
<b>Redevelopment Potential</b>					
Underutilized land (improvement to land value ratio below 2.0)	X	X			Station Area
Average station area land value per sq. ft.	X	X			Station Area
Ratio of average station area to corridor land value per sq. ft.	X	X			Corridor
<b>Development Barriers</b>					
Station area land used as industrial (ac.)	X	X	X		Station Area
Average station area parcel size (sq. ft.)	X	X			Station Area
Median station area parcel size (sq. ft.)	X	X			Station Area
Station area land on parcels >10,000 sq. ft. (ac.)	X	X			Station Area
<b>Value Trends</b>					
Five year trend in average assessed station area land value per sq. ft.	X	X			Station Area
Five year trend in average assessed station area land + improvement value	X	X			Station Area
Five year trend in corridor median home sales prices	X	X	X	X	Corridor
Ratio of station area to corridor five year trend in average assessed land values per sq. ft.	X	X			Corridor

Assessor data typically includes both the assessed land value and improvement value for every parcel and is widely available, often at little or no cost. Assessor data is publicly available from local assessors, county assessment offices, regional GIS repositories, or for a fee from private vendors. The New Starts project sponsor should provide contact information for local and/or regional agencies that can provide this data.

Sales price data is only used for one indicator – five-year trend in corridor home sales prices. This is a useful indicator as it shows actual market trends as opposed to trends in assessed values which may or may not reflect market trends. Sales data can be difficult to obtain, however. Multiple Listing Services (MLS) are privately run organizations that collect sales data and may provide it with limited availability. Public agencies collect sales data for tax purposes but it is not always stored in a form that is easily combined with GIS software, which makes it difficult to use when geography is important. Private vendors are limited by the data collection and availability of public sector data suppliers and can be costly. If sales price data cannot be readily obtained in a useful format at minimal cost, this indicator can be omitted.

A land use database is required for computing the industrial land use measure and for identifying which of the observations in the sales database are for owner-occupied residential properties. The industrial land use measure is of limited value because it may only be marginally related to the actual extent of environmental contamination. Furthermore, it is possible that the sales database includes information on whether or not the property is owner-occupied residential. If land use data is difficult to obtain and if it is not needed for analyzing the sales data, it can be omitted.

Only a few indicators involve the use of corridor-level data (a one-mile buffer around the alignment, as contrasted with the ½-mile radius station areas). In some cases, acquiring data for the entire corridor may require contacting additional municipalities that are not included within the station area boundaries. Unless data for these municipalities are already included as part of a dataset from a regional consolidator, it may not be worth the effort to contact additional municipalities to obtain data that covers only a small portion of the corridor and does not overlap with the station areas.

### ***Potential Data Issues***

When obtaining and working with parcel-level data, the analyst should inquire about and make note of the following issues that could affect the data and resulting indicators:

- Frequency at which assessments are performed;
- Which complete assessment years are represented in the parcel dataset (e.g. the most recent parcel dataset is 2007 but this represents the 2004 assessment year with partial updates to properties that had been sold, improved, or demolished since the assessment);
- Basis for updating assessments in years in which assessments are not performed (e.g. a county, municipality, or state might update or equalize assessment values based on sales between assessment years);
- Whether or not assessments are performed at market value, and if not, the basis for the assessment; and
- Any other issues that could potentially affect the quality of the assessment data or the reported trends in land and improvement values.

In addition, when working with the parcel level data, the analyst should be careful of certain potential issues with the data, including:

- Whether there are multiple assessment records attached to a single parcel (e.g., in the case of multi-family owner-occupied housing) or whether there are unique parcels divided into multiple records. The analyst should be careful to determine the relationship

between the parcel identification number, the parcel's size attribute, and the parcel's value attributes. Each individual parcel number should have appropriately summarized size and value attributes;

- Whether the metadata is included with the parcel data set;
- Whether transportation and utility rights-of-way and waterways are included as parcels in the dataset; and
- If the data is from a central repository, whether the assessment years for each municipality are the same.

Producing maps of key indicators is recommended as a data quality check. The following maps are suggested:

- Corridor parcels categorized by land type categories - (i) “undevelopable” (land value = 0), (ii) vacant and developable (land value > 0 and improvement value = 0), (iii) “underutilized”, (ILR <2.0), and (iv) other (ILR > 2.0);
- Land value by parcel (dollars per square foot);
- Percent change in land value by parcel value (change from year 1 to year 5 – average annual rate); and
- Percent change in total value by parcel (change from year 1 to year 5 – average annual rate).

### ***Calculation of Indicators***

#### ***Template B-1, Table 2c – Vacant and Underutilized Land***

**Total land area within ½ mile radius (acres)** – The total land area impacted is defined as the total acreage of all parcels whose centroids are within ½ mile of proposed new stations associated with the project. This will be close to, but not exactly equal to, the total area within a ½ mile buffer of each station. This is because the statistics are computed based on parcels, whose boundaries may extend beyond the ½ mile radius. Total land area excludes waterways and transportation and utility rights-of-way.

**Total undevelopable land area (acres)** – Undevelopable parcels are defined as those having zero land value. While the objective of this indicator is to identify land that is not considered developable (by virtue of not being on the tax rolls), the indicator will be inconsistent among projects and municipalities. Some municipalities assign positive values even to parcels that are not on the tax rolls, such as parks, colleges, and government institutions, while others do not. For municipalities that assign positive land values to all parcels, there is no easy way of identifying “undevelopable” land. Furthermore, “undevelopable” is somewhat of a misnomer as some types of zero-value land (e.g., college and university campuses) experience development. There does not appear to be an easy and consistent way of distinguishing land that truly has no development potential from land that does.

**Vacant and developable land area (acres)** – Vacant and developable parcels are defined as those that are not improved (zero improvement value) but have a positive land value. As noted above, in some jurisdictions, vacant land may include land that is not likely to be developed (e.g.,

parkland, environmental preserves) if the land is assigned a value. In others, land that is vacant but not developable will be included in the “undevelopable” category.

**Underutilized land area (acres)** – This is defined as land with an improvement value greater than zero but less than twice the land value; i.e., the ratio of improvement to land value (ILR) is positive but less than 2.0:1.

**Vacant and developable or underutilized land area (acres)** – This is simply the sum of the previous two indicators. It provides a rough idea of the total amount of land with significant redevelopment potential (considering the previous caveats regarding inconsistencies in the definition of vacant and developable land).

#### *Template B-1, Table 2f – Development Barriers*

**Average size of station area parcels** – The average parcel size is identified by measuring the average size of all parcels (total land area divided by total number of parcels) with centroids falling within a ½-mile radius of proposed new stations.

**Percent of land on parcels smaller than 10,000 square feet** – This indicator is calculated by identifying all station-area parcels smaller than 10,000 square feet, computing the land area of these parcels, and dividing by the total land area of station-area parcels.

**Percent of station area land in industrial use** – Industrialized land area is defined as those parcels that are designated in a land use database as having any industrialized land use. The total land area of industrialized parcels is divided by the total land area of parcels within a ½ mile radius (as computed above) to determine the percent of land in industrial use.

#### *Template B-1, Table 3b – Economic Indicators*

**Five-year average annual growth in average assessed station area land value per square foot** – This indicator is calculated by measuring the average land value of positive-value station area land (aggregate land value of positive-value parcels, divided by the land area of those parcels) for each available assessment year, calculating the percent growth from year to year, and taking the average of the percent increases across the period.

**Five-year average annual growth in median assessed station area land + improvement value** – This indicator is calculated as the average annual increase in the median assessed value of station area parcels, including land plus improvement value. It is computed by finding the median value in the station areas for each year, computing the percent increase in median value from year to year, and taking the average of the percent increases across the period.

**Five-year average annual growth in corridor median home sales prices** – The indicator is identified by finding the median “arm’s length” sales price of all single family homes and condominiums in the study area. Sales that are not at arm’s length (e.g., between friends or family) are generally identified by the assessor in the sales database and should be excluded.

**Average station area land value (dollars per square foot)** – This measure is computed as the average assessed value of all positive-value land in station areas. This measure excludes land with zero value. It can be computed as the aggregate (sum) of land value of all positive-value parcels, divided by the total land area on these parcels.

**Ratio of average station area to corridor land value per square foot** – This is the ratio of average station area land value to average corridor land value. Average corridor land value can be computed as the aggregate land value of all positive-value parcels with centroids in the corridor (a one-mile buffer around the alignment) divided by the total land area of these parcels.

**Ratio of station area to corridor average annual growth in average assessed land values per square foot** – The indicator is defined as the ratio of the average annual growth in station area land values (dollars per square foot) to the average annual growth in corridor land values.

## APPENDIX B – BLANK TEMPLATES

### Template A-1: Project Sponsor Submission

#### Location: [City], [ST] – [Project Name]

**Project Location:** [City], [ST]  
**Project Name:** [Project Name]  
**Sponsor Agency:** [Agency]  
**Date of Submission:** [Date]  
**Prepared By:** [Name, Sponsor Agency]

#### I - Developability of Station Area Land

*a. Provide an ordered list of proposed stations and identify which jurisdiction(s) have land use planning authority over the station area (1/2 mile radius). Also, identify any major institutions (e.g., universities, medical centers) that may be responsible for master planning within each station area.*

Total number of stations:

*b. Provide a brief description (no more than 1 paragraph per station or station cluster) of existing station area land use conditions, including typical uses, building styles, pedestrian network, and vacant or underutilized land. The narrative should address the extent to which land is available for new development or redevelopment/intensification of uses with transit-supportive densities and design characteristics.*

*c. Attach the New Starts reporting templates, including base and forecast year population for the metropolitan area, corridor, central business district (CBD), and station areas.*

d. Provide information to assist the FTA consultant in obtaining parcel-level tax assessors' data for the corridor (land area within a one-mile buffer of the alignment), including:

- The names, telephone numbers, and emails of contact staff at each local jurisdiction in the corridor (or a county or metropolitan agency) who can provide the tax assessors' data to the consultant; and
- A formal request to the local jurisdiction staff for their cooperation in providing these data to FTA's consultant for the purpose of New Starts project review.

e. If any studies of development potential have been conducted for the station areas, attach the studies and provide descriptive information below.

Projection Source (study name, date, and author):

Projection Year:

Type of Projection:

Qualitative

Build-out potential - existing zoning

Build-out potential - proposed land use/zoning changes

Best assessment/market-driven

Other (describe): \_\_\_\_\_

Description of Methodology:

f. (Optional) Provide narrative text highlighting any key issues, not addressed above or in the referenced documents, affecting the potential for new development, redevelopment, or further intensification of uses in station areas. Focus on the supply of land for development or redevelopment (market conditions/demand will be covered under Factor III).

g. Attach any available supporting documentation including:

- Aerial imagery of proposed station areas, showing the proposed station location and a ½ mile radius;
- Maps of existing land use in station areas; and
- Ground-level photographs of typical uses and station area conditions.

## II – Transit-Supportive Plans and Policies

a. Provide a brief overview of recent, underway, and proposed land use planning efforts that will apply to station areas, including: regional plans, local comprehensive plans, subarea or neighborhood plans, corridor plans, institutional master plans, urban design guidelines, station area planning processes, and/or any other relevant planning activities.

For each plan, be sure to indicate the sponsor(s), applicable station area(s), extent of public and stakeholder participation, products/outcomes, and key implementation mechanisms (including timeframe and responsibilities). Also, identify the extent to which the plan addresses transit-supportive development in general, and the proposed station areas in particular.

It is not necessary to provide a detailed description of the transit-supportive elements of the plans.

b. Describe any recent or proposed changes to station area zoning (e.g., adoption of transit or pedestrian overlay districts, traditional neighborhood design standards, or rezoning for mixed-use), including details of proposed changes and expected timeline for adoption:

c. Provide below or attach an inventory of relevant plan and policy documents, including electronic or hard copies of relevant documents, or links to such documents. This inventory should include municipal zoning regulations.

Document/Information	Date	Web Site

*d. If any studies have identified barriers to station area development and recommended strategies for overcoming those barriers or meeting needs, please identify the study and provide as supporting documentation. If not previously described, note the date of adoption of the study, process for including key stakeholders, and mechanism(s) to implement recommendations of the study.*

*e. For each of the following potential barriers to transit-supportive development identified below, discuss whether this has been identified as a barrier locally, and if so, what actions undertaken, planned, or recommended to overcome the barrier (including responsibility and proposed timeframe).*

*i. Existing zoning, development review and permitting process (TOD not allowed by-right, excessive review times for development proposals, etc.)*

*ii. Small parcels inhibiting land acquisition and assembly*

*iii. Infrastructure deficiencies (street, water/sewer, etc.)*

*iv. Environmental contamination, including need for cleanup and/or liability protection*

*v. Weak market conditions that limit the commercial viability of higher-density, mixed-use development in station areas*

*vi. Other barriers*

### **III – Economic Climate**

*a. Identify and attach any recently-conducted market studies that have examined indicators of regional, corridor, and/or CBD data on commercial and residential real estate markets as shown in Table 4.1 of the guidance (e.g., population and employment trends, office and residential rents and vacancy rates, home sales prices, single-family vs. multi-family permitting trends). Summarize any qualitative assessments of market conditions in the corridor.*

*b. Identify recent, planned, and/or proposed development projects in proposed station areas that demonstrate that policies and/or market forces are resulting in transit-supportive development. Include relevant details of the project (uses, size, density, design, etc.) and identify the project's status, including actual or projected completion date. For recently completed projects, include only those completed within the past five years. Provide photographs, conceptual drawings, and/or site plans if readily available (or links to web sites). News clippings documenting the status of projects and providing details are also helpful. As an alternative to narrative text, this information may be provided in the form of a tabular inventory.*

c. (Optional) In addition to the specific station area projects described above, describe any other evidence supporting the assertion that transit-supportive planning efforts have been successful, and/or that a strong local market exists for transit-supportive development (e.g., market studies, recent local infill/redevelopment activity, indications of developer interest).

**Template B-1: Consultant Report to FTA**

Templates B-2 and B-3 are available from FTA in spreadsheet form and include relevant formulas to support the calculations in the tables within Template B-1.

**Location: [City], [ST] – [Project Name]**

**Project Location:** [City], [ST]  
**Project Name:** [Project Name]  
**Sponsor Agency:** [Transit Agency]  
**Date of Assessment:** [Date]  
**Reviewer & Organization:** [Name], [Organization]

**I - Developability of Station Area Land**

*a. Provide an ordered list of proposed stations and identify which jurisdiction(s) have land use planning authority over the station area (1/2 mile radius). Also, identify any major institutions (e.g., universities, medical centers) that may be responsible for master planning within each station area. Identify stations within the CBD.*

Total number of new stations:

*b. In one page or less, describe existing land use conditions in station areas, focusing on the extent to which existing conditions could support additional transit-supportive development (considering vacant and redevelopable land, character of existing uses, and existing infrastructure and pedestrian network).*

*c. Complete the following data on population and employment as provided by the project sponsor.*

**Table 1c: Existing and Forecast Population and Employment**

Data	Base Year 2003	Forecast Year 2030	Growth (%)
<b>Metropolitan Area</b>			
Total Population			
Total Employment			
<b>Central Business District</b>			
Total Employment			
Employment Density (Employees per Square Mile)			
<b>Corridor</b>			
Total Population			
Total Employment			
Total Land Area (Square Miles)			
Population Density (Persons per Square Mile)			
Employment Density (Jobs per Square Mile)			
<b>Station Areas</b>			
Total Population			
Total Employment			
Total Land Area (Square Miles)			
Population Density (Persons per Square Mile)			
Employment Density (Jobs per Square Mile)			

Data Notes (unusual definitions, etc.):

*d. Based on an analysis of parcel-level data or visual inspection, provide an estimate of the total station-area land available for development or redevelopment; describe the source of this estimate and any noteworthy data limitations, caveats, etc.*

Data source:

Agency performing analysis:

Date of data:

Are parcels not included on the tax rolls assigned a positive value?

Data notes (methodological limitations, exclusions, etc.):

**Table 1d: Station Area Land Development Potential**

	<b>Value</b>	<b>Benchmark Rating</b>
Total land on parcels within ½ mile radius (acres)		
Total undevelopable land area (ac.)		
<i>% of total land</i>		
Total vacant and developable land area (ac.)		
<i>% of total land</i>		
Total underutilized land area (ac.)		
<i>% of total land</i>		
Total vacant and developable or underutilized land area (ac.)		
<i>% of total land</i>		

**Definitions:** “Undevelopable” land is defined as that with zero value. “Vacant and developable” land has a positive land value but zero improvement value. “Underutilized” land is defined as parcels that have improvements but with a ratio of improvement to land value less than 2.0. See the guidance for caveats on the data.

*e. Provide a summary of any build-out or market analysis of station area development potential provided by the project sponsor.*

Projection Source (study name, date, and author):

Projection Year:

Type of Projection:

Qualitative

Build-out potential - existing zoning

Build-out potential - proposed land use/zoning changes

Best assessment/market-driven

Other (describe): \_\_\_\_\_

Description of Methodology:

Comments on Methodology:

**Table 1e Build-Out or Market Analysis**

	Office (1,000 sq. ft.)	Retail (1,000 sq. ft.)	Inst. (1,000 sq. ft.)	Residential (DU)	Employment	Population
Current Level						
Additional Development Potential						
% Increase vs. Current						
Current Density (per sq. mi.)						
Avg. Density Increase						

## II – Transit-Supportive Plans and Policies

*a. Provide a brief narrative (no more than 1 page) summarizing the extent to which transit-supportive plans and policies have been developed or are in progress in the various local jurisdictions, including any station area planning activities as well as transit-supportive zoning ordinances.*

b. Provide a brief narrative (no more than 1 page) describing evidence of the extent to which each local jurisdiction and major institution is implementing and enforcing transit-supportive design principles in new development.

c. Summarize the results of the plans and policies assessment in Table 2c below. Attach Template B-2 as supporting documentation.

**Table 2c: Land Use Plans and Policies Summary Assessment**

Land Use Design and Density Metrics - Level Met	Adopted Policies	Proposed Policies
<b>Percent at least meeting level:</b>		
2 = Required		
1 = Preferred (e.g., design guidelines recommend)		
0 = Allowed (neutral/not specifically prohibited)		
-1 = Not allowed		
<b>Overall Average</b>		
<b>Benchmark Rating</b>		

d. Comment on the steps required for “proposed policies” to be implemented, the likelihood that this will happen, and the extent to which these policies are already being followed.

e. Identify any studies that have identified barriers to station area development and recommended strategies for overcoming those barriers or meeting needs. Describe mechanisms for implementing recommendations.

*f. In the table below, briefly describe the extent to which each potential barrier is present in the proposed project station areas, as well as any committed or recommended actions to overcome the barrier. If possible, identify the approximate number of station areas in which the barrier may be significant.*

**Table 2f: Barriers Assessment**

Barrier	Extent of Problem	Committed or Recommended Actions	Rating <sup>1</sup>
Zoning classification and/or development review and permitting process			
Land availability, acquisition, and/or assembly	<u>Avg. size of parcels (sq. ft.):</u> <u>Benchmark rating:</u> <u>% of land on parcels &lt; 10,000 sq. ft.:</u> <u>Benchmark rating:</u>		
Infrastructure improvements and financing mechanisms			
Environmental cleanup and/or liability protection	<u>% of land in industrial use:</u> <u>Benchmark rating:</u>		
Poor market conditions			
Other issues (describe)			

Notes:

<sup>1</sup>“Rating” is a reviewer-assigned qualitative rating re: the extent of the barrier, considering committed or recommended actions. A “high” rating is good (i.e., barrier is minor to non-existent).

### **III – Economic Climate**

*a. Provide a brief narrative (no more than 1 page) summarizing evidence regarding the strength of the local market to support transit-supportive development.*

*b. Complete the table of economic indicators below.*

**Table 3b: Economic Indicators**

<b>Indicator</b>	<b>Time Period</b>	<b>Value</b>	<b>Benchmark Rating*</b>
<b>Growth Indicators</b>			
MPO projected regional growth (% per year)			
Population			
Employment			
MPO projected corridor growth (% per year)			
Population			
Employment			
Average annual growth in values (5-year preferred)			
Average assessed station area land value per sq. ft.			
Median assessed station area land + improvement value			
Corridor median home sales prices			
<b>Price Indicators</b>			
Median class A office rent (3-year average preferred)			
Metro area			
Corridor			
Downtown			
Median price of owner-occupied housing units (3-year average preferred)			
Metro area – all owner-occupied units			
Metro area - single-family			
Metro area – condominium			
Average station area land value (\$/sq. ft.)			
<b>Other Indicators of Supply and Demand</b>			
New residential building permits: % multi-family (5-year average preferred)			
Class A vacancy rates (3-year average preferred)			
Metro area			
Corridor			
Downtown			
<b>Indicators of Station Area Health Relative to Corridor</b>			
Ratio of average station area to corridor land value per sq. ft.			
Ratio of station area to corridor average annual growth in average assessed land values per sq. ft.			

\*A “high” rating is always “good”, i.e., more likely to support development.

Data Sources:

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Data Notes:

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*c. Summarize total recently completed (past 5 years), under construction, and proposed development in proposed station areas in the table below.*

**Table 3c: Development Activity**

<b>Type of Development</b>	<b>Existing</b>	<b>Completed/ Underway</b>	<b>Planned/ Proposed</b>
<b>Total Development</b>			
Residential (units)			
Office (sq. ft.)			
Retail (sq. ft.)			
Institutional (sq. ft.)			
Hotel (rooms)			
<b>Estimated Total Activity</b>			
Jobs			
Population			
<b>% Increase vs. Existing</b>			
Jobs			
Population			
<b>Avg. Density of Activity or Increase (per sq. mi.)</b>			
Jobs			
Population			
<b>Benchmark Rating for Avg. Activity Increase</b>			
Jobs			
Population			

Data Sources:

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Data Notes:

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