- Uptown Martinsville -

Urban Development Areas

Comprehensive Plan Amendment

Martinsville
A CITY WITHOUT LIMITS

DRAFT July 14, 2011

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I.

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- Urban Development Areas -

I.

Urban Development Areas

The shape of American towns and cities has changed over time, with a major shift in American town planning coming in the late 1940s, when suburbs as we now know them today were developed. These new real estate projects placed new homes outside of existing towns, where they could only be accessed by car, rather than close to, or within, existing towns where walking or bicycling to destinations was possible. The new suburbs were largely made up of only one type and style of home, rather than the mix of home designs and sizes common in older villages.

Suburban development also strictly separated uses so that homes, shops, and offices were all in different locations that had to be driven to. This separation of uses was in contrast to the mixed-use character of older towns and cities, where a resident might find a grocery store at the end of a residential block. Most importantly, suburban development put houses on large lots, while older towns had been relatively compact. This type of single-use suburban development has been popular in certain areas of Martinsville, to the detriment of the traditional core of the City in Uptown.

While suburbanization brings certain benefits, ill effects of suburban development have been felt by municipalities, whose resources have been stretched by the utility, public safety, and maintenance needs of increased traffic and separated uses.

The UDA Legislation

As a way to address some of the negative effects of suburban sprawl and strip development, particularly on traffic and transportation, new legislation was adopted in 2007 as Virginia Section 15.2-2223.1 of the Code of Virginia, requiring certain high-growth localities to amend their comprehensive plans to incorporate one or more Urban Development Areas (UDAs).

The UDA(s) must be sized to meet projected residential and commercial growth in the locality for the ensuing period of at least 10 years, but not more than 20 years. In addition, federal, state and local transportation, utility, economic development, and other public funding should, to the extent possible, be directed to the UDA(s).

UDAs should be established in areas that are appropriate for higher density development due to (a) their proximity to transportation facilities, (b) the availability of public water and sewer infrastructure, and (c) their proximity to existing developed areas. The boundaries of the selected UDA areas should be identified on the Future Land Use Map.

Pursuant to the statutory requirements, the UDAs shall create appropriate areas within the City for development at more compact densities, on developable acreage, of at least:

- *Four single family residences per acre,*
- *Six townhouses per acre, or*
- *Twelve apartments or condominium units per acre; and*
- *A floor area ratio of at least 0.4 for commercial development.*

Development within designated UDAs should be based on the principles and features of Traditional Neighborhood Design (also called new urbanism). These features may include, but aren't limited to, (i) pedestrian-friendly road design, (ii) interconnection of new local streets with existing local streets and roads, (iii) connectivity of road and pedestrian networks, (iv) preservation of natural areas, (v) mixed-use neighborhoods, including mixed housing types, with affordable housing to meet the projected family income distributions of future residential growth, (vi) reduction of front and side yard building setbacks, and (vii) reduction of street widths and turning radii at subdivision intersections.

The Benefits of UDAs

The primary purpose of Virginia's urban development areas legislation is to improve the future efficiency of state-funded road building and maintenance. By expanding outward, rather than inward, and by strictly separating residential and commercial uses, suburban style development has brought about increased traffic and the financial burden of maintaining a busy and expanding road network.

The benefits of town-scale development, as seen in the existing Uptown area, can address some of the transportation effects of suburban development. By locating a residences and businesses closer together, and by mixing commercial and residential uses together in the same neighborhood, traditional development requires much shorter trips to access daily needs. The pedestrian focus of these areas also means that some trips may be made by walking or biking, thus removing vehicle trips from city streets.

In addition to transportation and preservation benefits, compact development can also mean shorter infrastructure connections for public water and sewer utilities, reduced need for school busing, and improved response times for police and fire services.

II.

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- Demographic Analysis -

II.

Demographic Analysis

Objective and Definitions

The approach to determining the boundaries and acreage of the UDAs adheres to the definitions and requirements of Section 15.2-2223.1 of the Code of Virginia. The major statistical objective of the legislation is to plan for the City's anticipated population growth over the next 10 to 20 years, and designate UDAs to accommodate this growth.

Because recent population projections for Martinsville by the Virginia Employment Commission forecast virtually no growth in the next 10 to 20 years, this study makes adjusted population projection with more positive assumptions. The projections employed here are for a 2% City growth rate between 2010 and 2020, and for 4% growth between 2020 and 2030. These growth assumptions will be applied to land uses specified in the UDA legislation according to the following method.

Land uses to be included in the UDA are defined by the legislation to include residential, commercial, and offices. Residential uses are divided into detached single-family, town homes and attached residential units (such as duplexes), and multifamily residential dwellings (such as apartments and condominiums). The Virginia planning legislation states that UDA densities are to be applied to the calculation of UDA developable acreage, that is, the primary area for active development exclusive of existing parks, road rights-of-way, railroads, utilities, and other public facilities.

Development Densities

The UDA legislation establishes minimum densities for basic land uses within UDAs. These densities are based on levels that have been found to be appropriate for application within Traditional Neighborhood Developments. The following densities are to be applied to the individual uses proposed for the City's UDA

URBAN DEVELOPMENT AREA LAND USE CATEGORIES

a. UDA Single Family Detached Residential:	*4 units/acre*
b. UDA Attached Residential:	*6 units/acre*
c. UDA Multifamily Residential:	*12 units/acre*
d. UDA Commercial and Office Employment:	*0.40 FAR*

e. A proportional mix of the above densities and intensity of use.

While the UDA statute provides a general definition to guide the sizing of the UDA, it does not address a specific technique and process for arriving at the developable acreage requirements for the UDA land uses. In order to provide a detailed projection of UDA land use needs, the consultant has constructed the UDA Land Use Model. The model generates calculations based on the density thresholds required by the legislation as well as assumed parameters for the distribution of density as established by the City and consultant. The following section describes the methods and assumptions adopted by this report to establish the total land area that is sufficient to meet the legislative sizing parameters for the UDA developable acreage and the overall yield of the uses contained within the UDA boundaries.

Distribution of Population Growth by Dwelling Type

The UDA is intended to provide opportunities for both the existing and future population that seeks to live in higher density residential neighborhoods. Such neighborhoods currently exist near Uptown, and current planning efforts have expressed a desire to continue such patterns. Future population demands for particular residential types could vary broadly based on national building conditions, local housing preferences, housing affordability, bank lending patterns, income levels of new residents, proximity to jobs, employment security in the marketplace, changes in City housing policies, infrastructure availability, and other factors.

Since the UDA residential developable acreage is intended to recognize a mix of housing types, the designation of the total residential area must be balanced among Detached Single-Family Residential, Town Home and Attached Residential, and Multifamily Residential. The Land Use Model produces a total of three different scenarios for the distribution of population by housing type. These scenarios range from growth being accommodated in mostly single family homes to an option that places a heavy reliance on town homes and multifamily development.

The most important planning consideration in the assessment of these alternatives is to understand the relationship between (a) the population projections, (b) the type of dwellings this future population may desire, and, ultimately, (c) the amount of land ("UDA Developable Acreage") necessary to absorb and be designated for this population during the years ahead. Ultimately, during the planning process, city officials will have to make the final selection of the preferred distribution of dwelling unit types to be assigned to the residential portions of the UDA.

For the purpose of testing the amount of required UDA developable acreages, the three scenarios focus on differing distributions of population among the three UDA housing types.

DISTRIBUTION OF RESIDENTIAL POPULATION GROWTH

	Single Family	Townhouses	Multifamily
Scenario 1:	*80%*	*10%*	*10%*
Scenario 2:	*25%*	*45%*	*30%*
Scenario 3:	*33%*	*33%*	*33%*

The findings show relatively small differences in total land demand based on the various housing type mixes tested by Scenarios 1, 2, and 3. This result is caused by the very different numbers of people living in different house types. While multi-family apartment or condo projects increase the density of housing units per acre, multi-family units tend to be home to fewer persons per unit. As a result, the three scenarios vary by only about 4%, making housing type mix a relatively small variable when calculated the required land area necessary to absorb residential demands.

Residential Dwelling Demand

The residential dwelling demand is calculated by applying the projected population to be distributed within each of the three housing categories to the corresponding density for the housing types. As indicated above, these densities are fixed based on those stipulated by the UDA statute. Keep in mind that the total future dwelling demand is a function of the distribution of projected dwelling types as well as the projected housing occupancy rates by dwelling type. For example, if 100% of future City residents seek to live in higher occupancy single family detached residences, there will be fewer dwelling units than if 100% of the residents lived in smaller (low occupancy) multifamily units.

Employment Projections

The model calculates existing and projected future employment by comparing the established VEC population growth projections to the percentage of City residents employed within the City. This percentage is derived from existing VEC statistics. The model also projects that this percentage will increase moderately in the future as UDA development works to stem out-commuting among City residents. Employment projections are used to estimate commercial land use sizes and allocations within the UDAs. The employment calculation incorporates a wide variety of business sectors that create the employment marketplace. These sectors are incorporated into three primary employment categories, including: (a) UDA Commercial and Office, (b) Non-qualifying Employment Uses (ie. job generating uses that support new towns and villages but which are not included in the UDA definitions), and (c) Government and Education Uses (also, not included in the UDA definitions.) The statistical distribution of and projections for employment within each of the three categories is unique to each locality.

UDA Commercial and Office Demand

Since the legislation recognizes the need for both residential and commercial uses within the UDAs, the Land Use Model also provides estimates for future office, retail, and other commercial land uses as well as justification for the calculation of the areas that they require. Using the generated employment growth projections, the model applies factors for representative building square feet per employee. These factors are applied in ranges based on commonly held factors and existing studies. As mentioned in the previous section, the commercial calculations are divided into three categories: UDA Commercial, Other Non-Qualifying Commercial (ie. employment uses not included in the UDA definition of "commercial"), and Government and Education.

These three categories allow for recognition of the differing building space and occupancy needs of these various land use categories that will be demanded over the course of the two decennial projection periods. "UDA Commercial" uses are generally defined by the legislation as retail, lodging, restaurants, professional offices, and service-related uses. As with the model's residential calculations, a vacancy rate is assumed in order to arrive at adjusted estimates that better reflect the actual commercial space needs within the UDAs.

UDA Developable Acreage

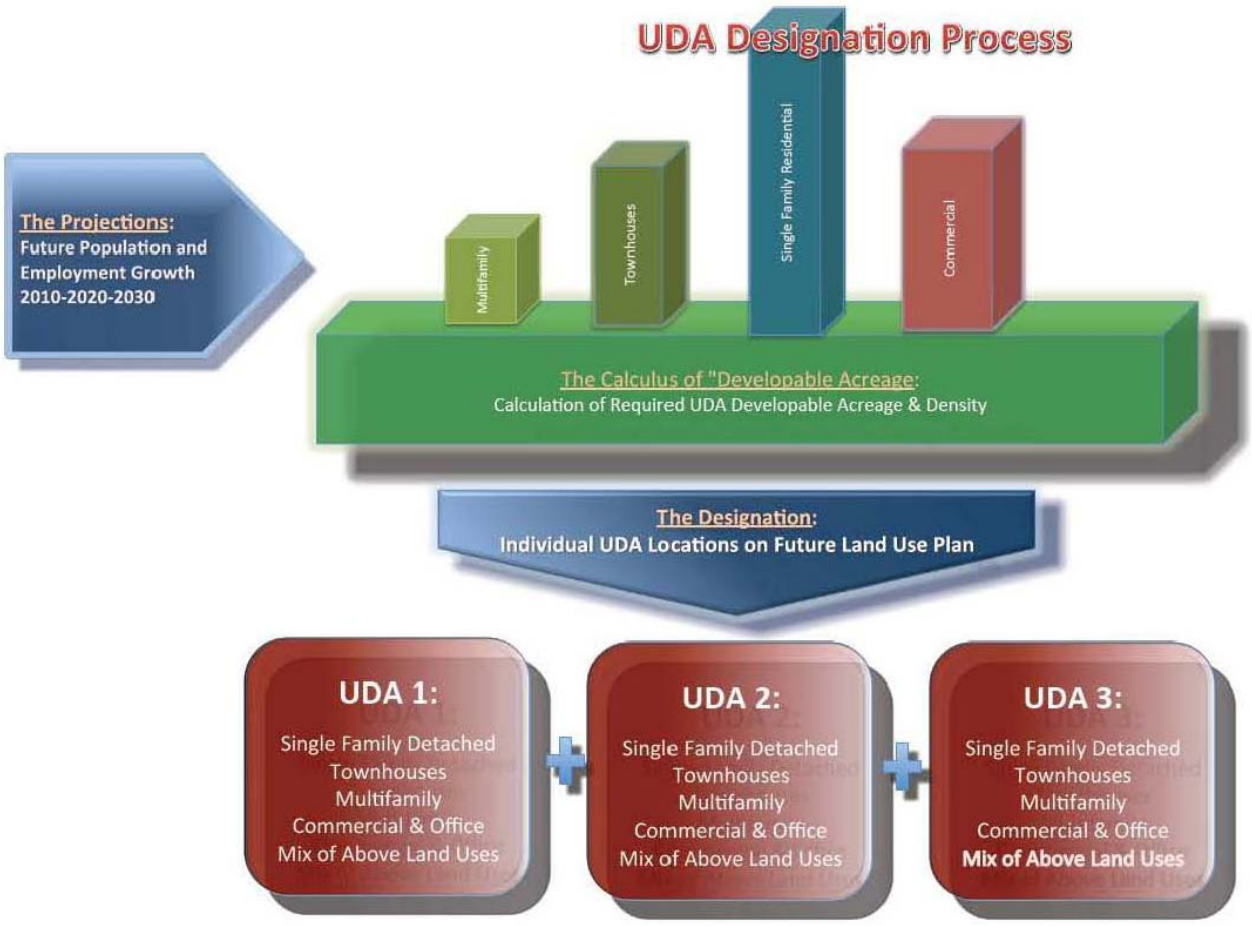
"UDA developable acreage" represents the land area necessary to accommodate the City's projected population and employment demands at the legislatively prescribed density thresholds. The total UDA acreage can then be divided among the three UDA locations in the City by either individual UDA use categories or a combination of categories that best represents a more balanced and proportional mix of uses. "UDA developable acreage" is assigned to both undeveloped land and redevelopment or revitalization areas that may be suitable for the absorption of the projected levels of qualifying residential, commercial or mixed uses.

Since the total "UDA developable acreage" for these uses is legislatively collared between the growth projections for the 2010-2020 and the 2010-2030 periods, the model's results are expressed as minimum and maximum areas for the absorption of future development or redevelopment activities. For the purpose of determining the "UDA developable acreage" of the land that is to be allocated to defined residential and commercial development, the calculation is derived by applying the "unit/acre" divisor for the residential category *(as established by the statute)* to the corresponding category's "total residential dwelling demand" quotient.

As an example, if the anticipated demand for single family housing were determined to be 200 units, the "developable acreage" for this category of residential use would be 50 net acres (200 units/4 dwelling units per acre). Accordingly, if only detached housing were to be included in the UDA, then the comprehensive plan must recognize a minimum of 50 "developable acres". However, since the intent of the UDA is provide the opportunity for a mix of uses, the net acreage must be determined for each of the land use categories included in the comprehensive plan, employing the "dwelling unit per acre" and "floor area ratio" factors prescribed by the legislation.

The equation for the determination of the total UDA land area to be designated by the City is expressed by the following:

UDA Developable Acreage =
UDA Single Family Detached + UDA Attached Residential +
UDA Multifamily Residential + UDA Commercial



UDA Impact Area

It is important to note that the Urban Development Areas are functionally planned as areas for village-like development within certain land use categories. For example, the legislative definition of TND commercial use, as it applies to UDAs, excludes certain economic development activities such as manufacturing, processing, assembling, storage, warehousing, and distribution facilities, as well as agricultural and forestal land uses. The definition of UDA developable acreage further excludes existing street rights of way, easements, parks, civic spaces, and other publicly owned lands. Of course, a wide variety of land uses, including those specifically excluded from the UDA developable acreage, are important to the overall function of any community, and cannot be discounted.

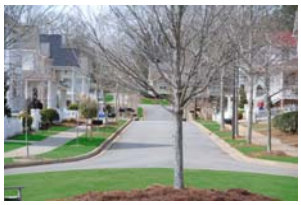
While not specifically defined or excluded, it is also important to recognize the stability and importance of certain existing land uses, as well as the development restrictions posed by certain environmental or topographic factors within the desired Urban Development Area.

Because Traditional Neighborhood Development as envisioned for UDA land use activities does not, and cannot, exist in a vacuum, the Land Use Model recognizes and incorporates "UDA Support Areas" into several of its calculations. The UDA Support Areas are meant to quantify the land use categories that evolve in response to the future population and employment demands. The support areas should be sized for incremental growth in civic uses, open spaces, recreation uses, transportation infrastructure, utility easements, and environmental protection areas. These support areas should be considered separately, and at rates that may vary based on perceived and assumed needs. These UDA-supporting areas may also include areas that provide support for employment growth and other uses that are not specifically identified or defined in the UDA legislation. The sum of the defined UDA Developable Acreages and the UDA Support Areas are viewed as creating a UDA Impact Area. Although only the UDA developable acreage is defined and designated by this model, the City should recognize and plan for support uses as a part of the overall comprehensive planning process.

Summary

Given the broad fluctuations that inevitably occur in predicting actual demographic demands from one decennial period to the next, estimates for the UDA developable acreage are presented in a broad range that represents the probable inside and outside acreage. From a comprehensive planning perspective, the estimated acreage must be viewed as a guideline to be revisited on a periodic basis with adjustments made to reflect evolving demographic trends and land use patterns.

Results



The City's Urban Development Areas will be sized to accommodate 10 to 20 years of projected city growth according to the assumed 2% 10 year growth rate and 4% 20 year growth rate mentioned earlier. These modest growth rates should deliver Martinsville to a population of 14,664 by the year 2020, and 15,250 by 2030. As a result, the City should plan for UDAs to accommodate between 388 and 874 new residents.

To properly size the city's urban development areas, The Cox Company prepared mathematical studies based on existing US Census and Virginia Employment Commission demographic data. The purpose of these studies was to transform existing and projected city population numbers, as well as data on city employment, into an accounting of the land area that would be necessary to accommodate future city growth at given TND densities. These studies were based on several different scenarios of the mix of residential unit types, from as much as 80% single family homes, with only a few townhouses or condos, to an equal mix of these three types,

each at densities contained in the UDA legislation. In all scenarios, commercial uses were also considered at the 0.4 FAR specified by the legislation. The charted results of these three scenarios are included on the following pages. The result of these exercises showed a need for UDA areas containing between 24 and 85 developable acres for residential uses, as well as 4 to 13 acres for commercial uses, for a total UDA developable acreage of 28 to 98 acres.

The City of Martinsville

Summary of Scenarios 1, 2 and 3: UDA Developable Areas and Impact Areas

RESIDENTIAL POPULATION GROWTH ASSUMPTIONS — Single Family Detached: 80% | Townhouse/Attached: 10% | Multifamily/Condos: 10%

SCENARIO #1: UDA ACREAGE	*Unadjusted UDA Acreage*	FMM = 1.5	FMM = 2.0
UDA Residential Developable Acreage			
Minimum Designation Area Threshold (2010 - 2020)	24.6	36.9	49.2
Maximum Designation Area Threshold (2010 - 2030)	81.3	122.0	162.6
+ UDA Commercial Developable Acreage			
Minimum Designation Area Threshold (2010 - 2020)	3.6	5.4	7.2
Maximum Designation Area Threshold (2010 - 2030)	13.1	19.7	26.2
= Total: UDA Designated Developable Acreage (= Residential + Commercial)			
Minimum Designation Area Threshold (2010 - 2020)	28.3	42.5	56.6
Maximum Designation Area Threshold (2010 - 2030)	94.4	141.6	188.8
+ *add:* UDA Developable Acreage + Impact Area Support (= UDA Residential + UDA Commerical + Industry + Support Area)	*Unadjusted UDA Acreage*	FMM = 1.5	FMM = 2.0
Minimum Designation Area Threshold (2010 - 2020)	52.6	78.9	105.2
Decennial Increment (2010 - 2020)	139.1	208.7	278.2
Maximum Designation Area Threshold (2010 - 2030)	191.7	287.6	383.4
+ *add:* EXISTING LAND USE IN UDA IMPACT AREA	*(to be determined by County upon selection of UDA location and acreage)*		
= Total: UDA DEVELOPMENT IMPACT AREA	(= Existing Land Use + UDA Residential + UDA Commerical + Other Employment + Support Area)		

** FMM: Free Market Multiplier - by designating multiple, competing properties, free market competition may be increased, and more urgent, higher quality development created.*

The City of Martinsville — Summary of Scenarios 1, 2 and 3: UDA Developable Areas and Impact Areas

RESIDENTIAL POPULATION GROWTH ASSUMPTIONS	Single Family Detached: 25%	Townhouse/Attached: 45%	Multifamily/Condos: 25%
SCENARIO #2: UDA ACREAGE	*Unadjusted UDA Acreage*	FMM = 1.5	FMM = 2.0
UDA Residential Developable Acreage			
Minimum Designation Area Threshold (2010 - 2020)	24.7	37.1	49.4
Maximum Designation Area Threshold (2010 - 2030)	85.3	128.0	170.6
UDA Commercial Developable Acreage			
Minimum Designation Area Threshold (2010 - 2020)	3.6	5.4	7.2
Maximum Designation Area Threshold (2010 - 2030)	13.1	19.7	26.2
Total: UDA Designated Developable Acreage (= Residential + Commerical)			
Minimum Designation Area Threshold (2010 - 2020)	28.3	42.5	56.6
Maximum Designation Area Threshold (2010 - 2030)	98.4	147.6	196.8
add: UDA Developable Acreage + Impact Area Support (= UDA Residential + UDA Commerical + Industry + Support Area)	*Unadjusted UDA Acreage*	FMM = 1.5	FMM = 2.0
Minimum Threshold: 2010 -2020	54.1	81.2	108.2
Decennial Increment: 2020 - 2030	150.4	225.6	300.8
Maximum Threshold: 2010 - 2030	204.5	306.8	409.0
add: EXISTING LAND USE IN UDA IMPACT AREA	*(to be determined by County upon selection of UDA location and acreage)*		
Total: UDA DEVELOPMENT IMPACT AREA	(= Existing Land Use + UDA Residential + UDA Commerical + Other Employment + Support Area)		

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The City of Martinsville

Summary of Scenarios 1, 2 and 3: UDA Developable Areas and Impact Areas

UDA RESIDENTIAL POPULATION ASSUMPTIONS	Single Family Detached: 33%	Townhouse/Attached: 33%	Multifamily/Condos: 33%

SCENARIO #3: UDA ACREAGE	*Unadjusted UDA Acreage*	FMM = 1.5	FMM = 2.0
UDA Residential Developable Acreage			
Minimum Designation Area Threshold (2010 - 2020)	23.9	35.9	47.8
Maximum Designation Area Threshold (2010 - 2030)	82.2	123.3	164.4
UDA Commercial Developable Acreage			
Minimum Designation Area Threshold (2010 - 2020)	3.6	5.4	7.2
Maximum Designation Area Threshold (2010 - 2030)	13.1	19.7	26.2
Total: UDA Designated Developable Acreage (= Residential + Commercial)			
Minimum Designation Area Threshold (2010 - 2020)	27.5	41.3	55.0
Maximum Designation Area Threshold (2010 - 2030)	95.3	143.0	190.6
add: UDA Developable Acreage + Impact Area Support (= UDA Residential + UDA Commerical + Industry + Support Area)	*Unadjusted UDA Acreage*	FMM = 1.5	FMM = 2.0
Minimum Designation Area Threshold (2010 - 2020)	52.6	78.9	105.2
Decennial Increment (2020 - 2030)	145.8	218.7	291.6
Maximum Designation Area Threshold (2010 - 2030)	198.4	297.6	396.8
add: EXISTING LAND USE IN UDA IMPACT AREA	*(to be determined by County upon selection of UDA location and acreage)*		
Total: UDA DEVELOPMENT IMPACT AREA	(= Existing Land Use + UDA Residential + UDA Commerical + Other Employment + Support Area)		

** FMM: Free Market Multiplier - by designating multiple, competing properties, free market competition may be increased, and more urgent, higher quality development created.*

III.

Martinsville
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- UDA Location -

III.

UDA Locations

The areas selected to serve as Urban Development Areas must be carefully chosen to take advantage of existing facilities and infrastructure, and to continue Traditional Neighborhood Development in a way that best promotes the City's vision for its future growth. The City's low growth rate, and the potential densities of TND projects, means that a relatively small number of individual parcels will be included within the UDAs. Careful selection of UDAs should focus on designating areas that are acceptable locations for higher density given the community's vision, as well as areas that best provide the infrastructure support necessary to make TND projects successful. In general, UDAs should be located based on:

- *Proximity to existing transportation facilities,*
- *Availability of public water and sewer systems, and*
- *Proximity to areas of existing development.*

In Martinsville, the selection of an Urban Development Area must also be sensitive to future employment needs and ongoing planning efforts focused on revitalization. Unlike some rural counties, traditional, town-scaled development is not foreign to the City. Martinsville has areas of existing urban development that can, and should, be enhanced and built upon through this effort, rather than beginning new.

Uptown

As the geographic and historical heart of Martinsville, the Uptown area is well-positioned as an Urban Development Area, and the center of future dense, mixed-use growth. With already substantial city streets and in-town development, this area certainly meets the designation criteria of being close to existing development efforts. The Uptown area is no stranger to density, mixed-use, on-street parking, pedestrian amenities, civic spaces, and other features that are the hallmarks of Traditional Neighborhood Design and Virginia's recent UDA efforts. City staff, as well as community organizations, have invested significant time and effort planning for the revitalization and continued success of the Uptown area. The emerging New College Institute also has the potential to add vitality and foot traffic to the area. Through this planning effort, the Urban Development Area designation should be used as a tool to enhance this existing and important urban area, rather than to shift the focus of urban development to other areas of Martinsville.

The Uptown area, in addition to having substantial existing urban growth, is well-served by transportation facilities. The core of the area is made up of Main and Church Streets, a parallel, one-way system with good capacity. Commonwealth Boulevard (SR 457) is a major regional route, with close proximity to Uptown. Starling Avenue (SR 57/58) also provides an important regional connection to the south. Within the city, Market Street makes important cross-town connections, with four total lanes that provide good traffic capacity.

The availability of public water and sewer utilities are an important consideration for future growth in Martinsville. By encouraging future development with the Uptown area, rather than in areas at the edge of the city, where new utility lines would need to be extended, the City can save substantially on new infrastructure costs. Vacant or underutilized sites within Uptown already have utility service within or nearby the site, although overall system capacity concerns must be carefully weighed. Savings may also be seen in other public services, including fire, police, school busing, and others by growing with the established area of Uptown rather than in relatively un-developed areas of the City.

UDA 1 – Baldwin Block

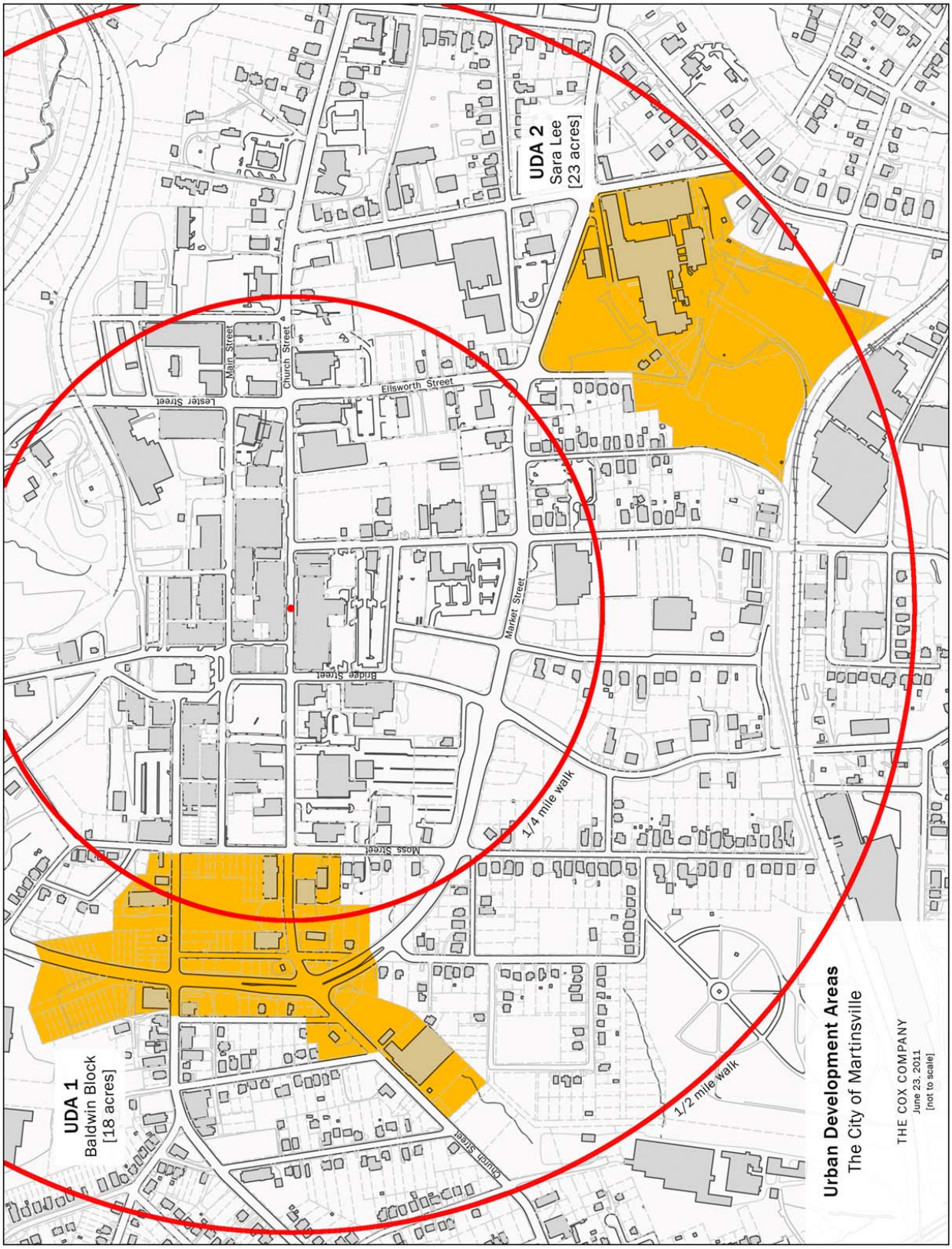
Commonly known as the Baldwin Block, a major Uptown infill parcel currently sits empty at the western terminus of Main Street. At about five acres, the future development of this site will be a very visible and important change to the character of the Uptown area. Future development on this block should be encouraged to continue existing street and building patterns that fit with the UDA definition, as well as with the existing character of Uptown, and to add new residential, commercial, and institutional uses.

This plan recommends an Urban Development area that encompasses the Baldwin Block, as well as adjacent infill and redevelopment sites along Church and Market Streets, for a total of 18 acres. With frontages on both sides of Church, Market, and Fayette Streets, TND development of these parcels has the opportunity to frame these streets and create meaningful streetscapes. New development within this entire area should strive to meet the TND conditions outlined later in this report, while any new street dividing the Baldwin Block should embody TND street design principles as described in this report.

UDA 2 – Sara Lee

To the south and east of the Uptown core, the former Sara Lee facility represents the largest contiguous infill, redevelopment, or adaptive reuse site in the Uptown area. At 23 acres, this site contains large amounts of undeveloped land, as well as former industrial buildings that are appropriate for adaptive reuse as commercial, residential, or other uses. With direct access to Market Street, and close access to Starling Avenue, the site is well served for automobile access. In addition, the property is within ½ mile of the center of Uptown, making for an approximate 10 minute walk to Church Street businesses.

The future development and redevelopment of the Sara Lee site should focus on the TND reuse of existing structures as residential condominiums and neighborhood supportive commercial uses. Development of the remainder of the property should include residential condos, town homes, and single family homes, with select commercial uses. By developing this site as a major new neighborhood of Uptown Martinsville, new pedestrian life, and new support for businesses, can be added to Uptown.


UDA 1
Baldwin Block
[18 acres]
UDA 2
Sara Lee
[23 acres]
Lester Street
Main Street
Church Street
Ellsworth Street
Bridge Street
Moss Street
Market Street
Church Street
1/4 mile walk
1/2 mile walk
Urban Development Areas
The City of Martinsville
THE COX COMPANY
June 23, 2011
[not to scale]

IV.

Martinsville
A CITY WITHOUT LIMITS

- UDA Comprehensive Plan Goals -

IV.

UDA Comprehensive Plan Goals

Future development within the Uptown Urban Development Areas will be guided by this, and other, sections of the Comprehensive Plan, as well as by applicable zoning, subdivision, and other ordinances, and should reflect the community's shared vision for its future, as well as state requirements.

The Comprehensive Plan Amendment for the City's Urban Development Area integrates a set of goals and objectives that specifically embrace the TND principles underlying the UDA legislation. While these goals and objectives are intended to be applied only in the designated UDAs, it is important that they are consistent and compatible with the Planning Commission and City Council's land use vision for the City. It is notable that the Martinsville's City Council has fully promulgated a vision for Traditional Neighborhood Development and "smart growth" in previous planning initiatives. This vision is well expressed in the guiding principles and goals found in the City's Comprehensive Plan Update, adopted February 24, 2009, the Uptown Vision 2015 document, the Uptown Martinsville Revitalization Plan, dated February, 2010, and other key documents related to the City's demographic, housing, and market characteristics.

Perhaps the best articulation of the vision for Martinsville and the region to become a reinvigorated environment in which people can *"live, shop, work, play and learn"* is stated in the six principles found in the Uptown Martinsville Vision 2015 document:

- *To become an entrepreneur-friendly community.*
- *To promote higher education and artisans to generate new income earning potential.*
- *To promote an arts-driven "creative economy".*
- *To make tourism a significant economic development activity for the region.*
- *To create new housing opportunities that will generate housing demand within Uptown.*
- *To enhance pedestrian amenities and create recreational experiences.*

The 2009 Comprehensive Plan embraces the concept and application of smart growth in Martinsville, and it places strong emphasis on the need to concentrate compact and walkable mixed-use development in the city center:

> *"Smart growth is a planning theory that concentrates growth in the center of a city and advocates compact, transit oriented, walkable, bicycle-friendly land use including mixed-*

use developments with a range of housing choices that foster a distinctive, attractive community with a strong sense of place.
Smart growth practices take advantage of existing infrastructure and resources, promote in-fill and redevelopment opportunities, as well as mixed use districts with retail or commercial space on the first floor combined with residential units on subsequent floors.
Smart growth uses comprehensive planning to guide, design, develop, revitalize and build communities for all that:

- *have a unique sense of community and place;*
- *preserve and enhance valuable natural and cultural resources;*
- *equitably distribute the costs and benefits of development;*
- *expand the range of transportation, employment and housing choices in a fiscally responsible manner;*
- *value long-range, regional considerations of sustainability over short-term, incremental, geographically-isolated actions; and*
- *promote public health and healthy communities.*

In looking towards the future of Martinsville, it is essential that the City consider smart growth planning principals today to help guide the future growth and development of tomorrow. The Future Land Use map has been modified to include a new classification for Mixed-Use District. These districts would be located adjacent to the Central Business District along Market Street and Cleveland Avenue as well as a portion of Fayette Street. They would promote mixed-use opportunities, in-fill as well as redevelopment of an existing manufacturing structure and would be located within close proximity to the center of the City. Compact, transit accessible, pedestrian-oriented, mixed-use development patterns and land reuse epitomize the application of the principles of smart growth.

According to planning theory, the ideal land use composition is approximately 60 percent commercial activity to 40 percent residential. This mix of land use allows for a strong economic base that supports healthy growth and development within the community. The City's existing land use distribution pattern is approximately 43 percent professional, commercial and industrial to 57 percent residential.
In order to move towards a more economically viable land use mix, it is crucial for the City to look at ways to promote a healthy jobs-housing balance. By allowing for the mix of land uses, the City is providing the potential for opportunities to both live and work in close proximity, which will help support a better balance between jobs and housing, will promote compact development principals and will reduce transportation dependency." (Martinsville Comprehensive Plan, Chapter 9-6)

Further support for having the Future Land Use Map recognize TND development and mixed-use policies can be drawn from the 2009 Plan's "Land Use Summary":

Future Land Use Maps geographically assign the adopted mix of land use classifications upon which future zoning decisions are based. Changes to the Future Land Use Map are based on various factors including population trends, economic indicators, smart growth principals as well as planned development projects.

The City's trend toward an older population base led to the creation of a Residential Retirement District, which would be made up of small homes and villages in quiet neighborhoods with close proximity to necessary amenities.

Economic indicators attest to the decline in the manufacturing segment of the economy while showing growth in areas such as health, service and professional. These indicators dictate the need for increased Professional District designations while decreasing the number of manufacturing districts on the Future Land Use Map.

Smart growth practices take advantage of existing infrastructure and resources, promote in-fill and redevelopment opportunities, as well as mixed use districts with retail or commercial space on the first floor combined with residential units on subsequent floors. The addition of Mixed Use Districts adjacent to the Central Business District is an example of smart growth planning that promotes mixed-use opportunities, in-fill as well as redevelopment of an existing manufacturing structure, with close proximity to the center of the City.

Planned development projects and transportation projects that will impact the land use planning efforts of the City include the construction of a sports complex and arena in Uptown Martinsville and a professional/commercial development and street widening project on Liberty Street. These projects contributed to the decision to expand the Central Business District and designate the Liberty Street corridor as a Commercial corridor. ***(Martinsville Comprehensive Plan, Chapter 9)***

Recognizing the diverse interests and pressing needs of the City, its business community and its residents, the Comprehensive Plan acknowledges many of the land use, community facility, transportation, and urban infrastructure priorities and initiatives around which UDA land uses as well as supporting housing, economic growth, and industrial development goals and objectives can be pursued. Critical to UDA legislative objectives, the 2009 Plan underscores many of the key transportation planning principles that are essential to successful TND planning, particularly urban core development and redevelopment. Most important among these is the absolute necessity to view transportation planning and land use planning as a fully integrated objective; and not to be viewed as a process where transportation plans follow behind (and are subordinate to) land use plans. In TND planning and growth management practices, transportation plans establish the backbone (ie. *grid*), in both a figurative and literal sense, for the comprehensive planning process. The 2009 Comprehensive Plan extends these principles into the following relevant recommendations:

Population and Demographic Analysis Recommendations:

- *Market the area as a desirable and affordable place for retirees to locate.*
- *Plan for retirement residential development areas to accommodate an increasingly aging population.*
- *Continue to concentrate on providing a greater variety of recreational opportunities for all age groups, especially the young adults.*
- *Provide educational opportunities for all segments of the City's population, especially the*
- *Hispanic sector, to ensure that it is truly inclusive.*

- *Provide community programs to entice the younger segment of the City's population to remain or return to the area once they have completed their educational goals.*
- *Continue to support efforts of the area educational institutions to keep the college age persons in the City, or encourage new individuals to locate here.*
- *Research and provide programs to encourage entrepreneurs of all age groups to establish businesses in the City. Create an atmosphere for small business development. The premise being that job opportunities attract numbers of people.*
- *Market the area as a family-friendly area in which to locate.*

Economy Recommendations:

- *Support the development and expansion of identified target business clusters in health care, plastics manufacturing, tourism, logistics, and food processing to continue diversification of the local economy.*
- *Continue to develop and support existing business resources to help maintain and strengthen existing businesses.*
- *Promote entrepreneurial development and small business expansion.*
- *Continue to support the Martinsville-Henry County Economic Development Corporation.*
- *Increase base of workers and residents in Uptown Martinsville.*
- *Develop new specialized retail clusters in Uptown focused on home furnishings, African-American culture and sports.*
- *Encourage the construction of I-73 beginning at the North Carolina border and continuing north through Henry County.*

- *Encourage redevelopment of vacant buildings and industrial sites.*
- *Continue marketing efforts for Rives Road Industrial Park and Clearview Business Park.*
- *Maintain an up to date inventory of all vacant land and buildings for possible infill development.*
- *Encourage corridor overlay districts to enhance Martinsville's visual appeal to business, industry, residents and tourists.*
- *Continue to encourage the growth of tourism.*
- *Encourage the development of a "land banking" program.*
- *Continue to encourage job training and education programs geared towards creating a trained workforce.*
- *Evaluate the creation of a Technology Zone.*

- *Pursue the creation of a "Cyber City" designation for Uptown Martinsville to include maps and signage for wireless hot spots.*
- *Continue to support the marketing of revenue sharing lots at the Patriot Centre and the newly acquired Roma Property sites.*
- *Continue to work towards creating a "pro-business" environment.*
- *Support the development of the proposed multi-purpose field house and arena complex in Uptown Martinsville.*
- *Community Facilities, Services, and Utilities Recommendations:*
- *Continue to market the benefits of the MINet (Martinsville Informational Network) fiber optic network. This has the potential to be a good revenue generator.*
- *Make better use of public facilities, such as schools and other community buildings to ensure that they are truly multi-use.*

- *Research and plan for more efficient placement of fire facilities to ensure optimum coverage of the City neighborhoods.*
- *Develop strategies for educating the public about existing services and resources in order to lower the number of health related issues.*
- *Develop strategies to enable the City of Martinsville to achieve the goal of being a "truly wired city".*
- *Continue to market the concept that a "healthy city is a happy city", utilizing the programs already in place.*
- *Continue the effort to maintain and upgrade the assortment of recreational facilities in the City.*
- *Complete the network of walking and biking trails within and without the City.*
- *Continue to support the growth of the New College Institute as an integral component of the growth and upgrading of the City in general, and Uptown area in particular.*

- *Develop facilities that meet the needs of the residents of the City, particularly the young families.*
- *Incorporate private buildings located in the Uptown area in the public education of elementary and middle school students. This type of mixed use can possibly offset the costs associated with the growing costs of capital improvements necessary every year. It can also utilize the newly constructed Uptown Arena/ Multi-Purpose Center to meet the recreational needs of the students.*

Housing Recommendations:

- *Ensure that all properties are maintained in keeping with the character of the neighborhoods in which they are located.*
- *Increase the number of single-family homes to stabilize and increase the currently decreasing population.*
- *Continue to market the Uptown area as a residential neighborhood for the more urban-minded, middle-income and upper-income residents.*
- *Plan residential retirement areas and market the area as a desirable and affordable place for retirees to locate.*
- *Develop transitional housing for single men and families with a male householder present.*
- *Continue the revitalization of neighborhoods as a vehicle to stabilize the City as a whole.*
- *Encourage the development of a purchase / rehab and sale program for residential properties.*
- *Encourage the infill development of vacant lots for new residential housing.*
- *Explore and implement amendments to the zoning ordinances to encourage new and innovative housing throughout the City.*
- *Develop additional renter-occupied, multi-family units for low- to moderate-income families.*
- *Pursue greater enforcement of the existing property maintenance and building codes as it applies to investor-owned residences.*
- *Research and develop undersized lots for possible consolidation into larger building lots for the construction of single-family residences.*
- *Update or create an action plan to address the vacant and abandoned properties to ensure that all properties are maintained in keeping with the character of their respective neighborhoods.*

Transportation Recommendations:

- *Continue development of trails in the City working with Harvest Foundation, VDOT and others as sources of funding.*
- *Develop program for signing principal bicycle routes in the City plus striping lanes on streets where this is practical.*
- *Integrate walking trails and bicycle routes where it is practical so that multi-use is encouraged.*
- *Continue to develop a transit system, so that the community has inexpensive, accessible transit options as necessary to continue vitality of certain of the community's transit-dependent constituencies. Transit development can include coordination with Henry County, private sector sponsors and financial supporters, Virginia Department of Rail and Public Transportation, Virginia Department of Transportation, human services and other public agencies.*
- *Develop approach to placing bicycle racks on transit vehicles to aid in advancing multimodal integration.*
- *Pursue recommendations of the bicycle plan.*
- *Extend the Uptown Rail Trail to connect to the central business district.*
- *Identify spot locations on recommended bicycle routes for opportunities to provide bike lanes to cyclists.*
- *Develop a plan and construct facilities to include bicycle route access and bicycle racks to make the downtown central business district (Church Street) bicycle "friendly."*

Land Use Recommendations:

- *Maintain an up to date inventory of all vacant land and buildings for possible infill development.*
- *Encourage compact, mixed-use development that will make efficient use of the infrastructure while maintaining the character of the area.*
- *Pedestrian and bicycle oriented development should be encouraged.*
- *Appropriate transitions, linkages and buffers between different land uses need to be developed and strongly encouraged.*
- *Connections between commercial and residential land uses, through the use of conveniently located roadways, bikeways and pedestrian pathways should be strongly encouraged.*
- *New development should be in keeping with the character of the neighborhood in which it occurs.*
- *Enhanced landscape buffers and screening should be strongly encouraged on all new development projects.*
- *Examine parking requirements for new development projects as well as lot location. Rear parking should be strongly encouraged where feasible.*
- *Continue to support and encourage civic beautification projects by Gateway Streetscape.*
- *Promote development of City parks, green spaces, trails and other recreational opportunities.*
- *Study the development of a Corridor Overlay district to enhance the appearance of the gateways and major corridors in the City.*
- *Continue to promote the development of local historic district designations for Uptown Martinsville as well as the East Church Street/Starling Avenue district.*
- *Support revitalization efforts for Uptown Martinsville. Residential development*

should be strongly encouraged for upper floors.

- *Encourage development of an Arts and Cultural district along Starling Avenue.*

(Martinsville Comprehensive Plan, Chapter 10)

It is clear that the City's Comprehensive Plan paves the way for land use practices that embrace contemporary planning approaches to urban development: Traditional Neighborhood Development, New Urbanism and Smart Growth.

Emerging from these adopted goals and policies, the UDA Comprehensive Plan Amendment is intended to narrow the focus on how best to apply the TND principles as outlined in the preceding chapter. Each new TND goal and supporting objective and policy statement should be compatible with the City's vision for the future as cited in the goals and policy statements above. In doing so, a series of questions were asked of each:

a. *Can the TND goal contribute to the City's ability to fulfill its stated vision for the revitalization of Uptown Martinsville?*

b. *Can the realization of the TND goal lead to zoning and subdivision regulations that promote the concept of a "creative economy" while better protecting the City's sensitive environmental areas?*

c. *Can the TND goal promote a vision for high quality, responsible economic development within areas where the County is committed to provide infrastructure and services?*

d. *Can the TND goal provide adequate guidance for the implementation of the UDA legislation, in general, and the City's adopted strategies for progressive development, redevelopment, and growth management within the designated Urban Development Areas, in particular?*

e. *Can the TND goal lead to better forms of land development that reduce economic impacts on the City?, and*

f. *Can the TND goal fortify the existing Comprehensive Plan's land use goals for the City and the entire region?*

The specific TND goals are intended to supplement the existing goals and recommendations of the City's 2009 Comprehensive Plan and the Uptown Revitalization Plan. In concert with these, they are to be applied to the specific locations selected for the two UDA locations pursuant to Section 15.2.-2223.1 of the Code of Virginia. Consistent with the intent of the legislation, the TND goals statements are to be incorporated as a separate section into the City's Comprehensive Plan. With their application to be uniquely focused on the selected UDA locations, it is understood that the TND goals in the following section (as well as the balance of the UDA study) are structured to complement and, where appropriate, expand upon, but not restate, recommendations contained in the Comprehensive Plan.

In pursuit of the County's overall planning goals, and in recognition of Traditional Neighborhood Design principles stated in the UDA legislation, the following goals should be considered when weighing the approval of any proposed development within Martinsville's designated Urban Development Areas:

1. Establish appropriate locations in the Martinsville Uptown UDAs for residential and commercial land uses with development densities that promote TND growth.

2. Establish a blended mix of residential and non-residential land uses that reflect TND planning objectives.

3. Create a variety of housing types, including affordable and workforce housing, to meet the range of anticipated family income distributions of future residential growth.

4. Encourage better spatial organization through the reduction of building setbacks, lot widths, and front and side yards, and the incorporation of smaller lot sizes.

5. Incorporate pedestrian-friendly road and street designs.

6. Reduce subdivision street widths and turning radii at streets intersections, and provide standards for enhanced street landscaping, pedestrian improvements, and pavement design.

7. Establish connectivity between internal road and pedestrian networks within TND projects, providing a grid rather than cul-de-sac street pattern.

8. Promote the interconnection of new TND streets with existing streets and roads.

9. Ensure the preservation of natural areas and open space in conjunction with the TND master planning process.

10. Plan for the phasing of new TND development within the City's designated development and redevelopment areas consistent with anticipated population and employment growth.

11. Explore strategies and initiatives to concentrate financial and other incentives that encourage development within the UDAs rather than scattered throughout the City.

12. Evaluate the potential for the UDAs to serve as receiving areas for any future TDR program established by the City.

13. Prioritize funding for housing, economic development, public transportation, and infrastructure projects within the UDAs.

V.

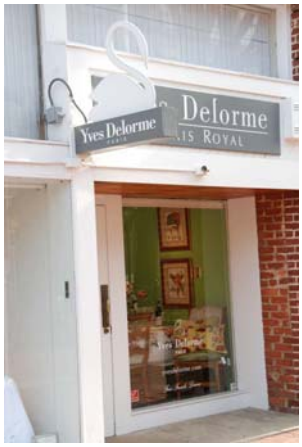
Martinsville
A CITY WITHOUT LIMITS

- TND Planning Principles -

V.

TND Planning Principles

A positive response to the ill effects caused by suburban sprawl over the past 50 years has been the efforts of some architects, engineers, and planners to design new real estate developments that draw on the features of successful cities and towns of the past. Alternately called Traditional Neighborhood Development, New Urbanism, or Neo-traditional Neighborhood Design, this form of development attempts to build mixed-use communities that function within cities rather than as disparate parts, to place uses close enough to each other to allow walking or bicycling in addition to automobile travel, and to build all of this at a convenient, attractive, and functional human scale.



TND PRINCIPLES

The following is a list of TND Neighborhood features drafted by Andres Duany, an internationally known architect and urban planner who has been instrumental in establishing TND as a modern community planning movement. Mr. Duany's list of TND neighborhood features provides a good base for understanding TND development. The neighborhoods that this list talks about are the basic building blocks of traditional neighborhoods, towns and cities. Each neighborhood is a well-defined place with its own uses, look, and feel. Any number of residential neighborhoods, transitional neighborhoods, or core neighborhoods, where commercial uses are located, can combine to make up a larger city or TND community.

Future development in Uptown, whether new development, infill, or redevelopment, should strive to achieve these characteristics. While it may not be possible for a given neighborhood to exhibit all of these features, each of the items in this list builds upon the others to create a meaningful place that is viewed more as a village and community than simply as a housing or commercial development. It is no coincidence that these features are also those exhibited by the most successful and desirable historic cities and towns in Virginia.

1. The Neighborhood has a discernible center. This is often a square or green, and sometimes a busy or memorable street intersection. A transit stop would be located at this center.

2. Most of the dwellings are within a five-minute walk of the center. This distance averages one-quarter of a mile.

3. There is a variety of dwelling types within the Neighborhood. These usually take the form of houses, rowhouses, and apartments, such that younger and older people, singles and families, the poor and the wealthy, may find places to live.

4. There are shops and offices at the edge of the Neighborhood. The shops should be sufficiently varied to supply the weekly needs of a household. A convenience store is the most important among them.

5. A small ancillary building is permitted within the backyard of each house. It may be used as one rental unit, or as a place to work.

6. There is an elementary school close enough so that most children can walk from their dwelling. This distance should not be more than one mile.

7. There are small playgrounds quite near every dwelling. This distance should not be more than one-eighth of a mile.

8. The streets within the Neighborhood are a connected network. This provides a variety of itineraries and disperses traffic congestion.

9. The streets are relatively narrow and shaded by rows of trees. This slows down the traffic, creating an environment for the pedestrian and the bicycle.

10. Buildings at the Neighborhood center are placed close to the street. This creates a strong sense of place.

11. Parking lots and garage doors rarely front the streets. Parking is relegated to the rear of the buildings, usually accessed by alleys.

12. Certain prominent sites are reserved for civic buildings. Buildings for meeting, education, religion, or culture are located at the termination of the street vistas or at the Neighborhood center.

TRANSECTS: A Comprehensive Planning Approach

Transects are an attempt to describe built and natural environments within a regional context. Born out of the New Urbanism movement of the 1980s, transects describe a geographical gradient of development areas, uses, and densities based on their proximity to the jurisdiction's core area. As a planning doctrine, transects mimic the concentric ring plan seen in many city plans. Transects organize all development along a scale centered on the existing core area; the farther out one gets from the core, the less density is allowed. From a comprehensive planning standpoint, transect areas are typically defined by and organized into six distinct planning sub-areas, ranging from sparse rural farm houses to dense urban buildings. Each transect has specific rules and regulations governing building types, development form, densities, setbacks, and lot types. These zones are generally classified, as follows:

- *Natural areas and preservation areas (little or no development),*
- *Rural areas (very low residential densities associated with agricultural activities),*
- *Neighborhood edge areas (transitional, suburban densities on the edge of town),*
- *General neighborhood areas (medium residential densities within traditional subdivisions),*
- *Neighborhood centers (high density residential areas within walking distance to core areas), and*
- *Urban core areas (highest residential densities coupled with town center commercial development).*

In the case of Martinsville, the full spectrum of transects would encompass areas of Henry County that are devoted to agricultural and very low density residential uses in addition to the General Neighborhood, Neighborhood Center, and Urban Core areas found in Martinsville and the Uptown area. It is important to note that this UDA planning study deals only with the more dense, urban end of the transect spectrum, while other elements of the City comprehensive plan will continue to treat other areas of the spectrum, including Martinsville's more outlying residential zones. While not intended to conflict with other components of the comprehensive plan, the UDA planning priority is to establish locations and guiding principles for the governance of higher density, mixed-use TND projects. This should certainly not diminish the importance and viability of transect planning as a bona fide regional growth management process for the entire region.

TND Design Vision for Uptown

With the UDA emphasis on traditional neighborhood design, it is important to establish a vision around which new and redevelopment projects should be evaluated. As with any design exercise, there are certain major component parts in the creative process that can be assessed and configured to achieve the desired results. For the designated Uptown UDAs, the two dominant categories of design components are transportation and land use. Within these two design components, there are opportunities for new development, infill development, and redevelopment of existing public and private properties, with existing city streets serving as the backbone for infrastructure support.

The extent to which quality development will be realized will be a function of the desired level of commitment to planning, growth management, public/private coordination, capital improvements planning, and political priorities. Nevertheless, successful TND development, particularly in already-dense locations, must combine both private and public initiatives to achieve success in the marketplace. As a short-term catalyst, the City can engage in public right of way improvements that can be accomplished via the introduction of landscaping, pedestrian and bicycle facilities, street furniture, streetscape upgrades, storm drainage improvements, and innovative signage. However, over the long haul, the ultimate success of any city can be achieved only through the application of more provocative comprehensive planning, quality urban design, innovative transportation strategies, and, most importantly, significant levels of private investment in the community.

As a part of this UDA study, the consultant has undertaken a series of urban design studies to explore public and private property improvements that can contribute to the overall success of UDA areas. These improvements are shown by digitally manipulating photographs of individual locations in a series of improvement phases. The public improvements shown include pedestrian, landscaping, and street furniture improvements. Building and other property improvements are also shown that may result from provate sector investment under UDA guidelines.

TND Design Concept #1: Adaptive Re-use

This study shows a hypothetical redevelopment of the existing industrial facilities on the Sara Lee site. By adding streetscape improvements and dividing a large industrial space in to smaller retail, service, or residential units, a traditional and vital urban streetscape could be created. The graphics were prepared employing base condition photography and computer design imaging processes. They are intended for only for the purpose of demonstrating how TND forms of land use could be organized and implemented at various locations in the UDA

Existing Land Use: Abandoned industrial facility, with no streetscape or use available to the public adds nothing to the nearby Uptown.

Phase 1: Enhanced internal streetscape creates an attractive place for residential and commercial uses. Improvements include new paving, streetlights, and landscaping.

Phase 2: TND Adaptive reuse of the industrial buildings can add vitality to the street, as well as to the nearby Uptown core through retail and residential uses.

Phase 3: Further Traditional Neighborhood Development can establish the UDA site as a distinct neighborhood center of Uptown Martinsville.

TND Design Concept #2: Compatible Corridor Redevelopment

This general design example from the Hampton Roads area examines how existing automobile oriented uses can be retrofitted over time to fit within a a more pedestrian-oriented urban development pattern and streetscape. These examples were created as three hypothetical land use scenarios that could be developed over three successive phases, thereby providing property owners with greater market flexibility. They are intended for only for the purpose of demonstrating how TND forms of land use could be organized and implemented at various locations in the designated UDA.

Existing Condition: Urban Corridor Street Section; VDOT-designed Infrastructure; No Sidewalks, Unorganized Streetscape Pattern and No Landscape.

Phase 1: Enhanced Public Right of Way Improvements, to include Sidewalks, Street Lights, Pavers, and Landscaping; Maintain Existing Commercial Use

Phase 2: TND Adaptive Reuse for Restaurant; Reconfigure Commercial Entrance for Access to Future Parcels and Coordinate Infrastructure Services, Introduce On-Site Hardscape and Landscape Improvements

Phase 3: New TND Development for Bistro and Additional Shops on Infill Property; Shared Parking and Access with Prior Phase development

VI.

Martinsville
A CITY WITHOUT LIMITS

- UDA Land Use Plan -

VI.

UDA Land Use Areas

The Uptown UDA plan has been constructed around an analysis of its land use areas and neighborhoods. The plan's TND principles and guidelines for the Uptown Urban Development Areas mapped in Section III attempt to shape new development in ways that are compatible with the existing Uptown, and with general provisions for in-town, rather than suburban, planning. Traditional Neighborhood Development is set apart from typical suburban construction by its focus on compactness, its mix of land uses, and other features aimed at building meaningful neighborhoods and places rather than monotonous, use-separated development. While it is a common suburban development practice to organize land uses into areas for commercial use, residential use, etc., TND development is organized into areas based on intensity of use and activity instead. The land use components of the TND can generally be divided into three main categories of intensity:

- *Core Area*
- *Transitional Area*
- *Residential Area*

The Core Area contains most of the community's commercial uses, including shopping, dining, and offices, in multi-story buildings along walkable streets. The upper floors of these buildings might also include condominiums or apartments. The Core is modeled after Main Street areas of older Virginia towns and cities. Nearby the core area is a Transitional Area where dense residential uses like condominiums and town homes are found, along with some small commercial uses that serve these residences, such as corner stores and coffee shops. Even farther out from the core are Residential Areas that are mainly made up of single-family homes, but also with some town homes or condos mixed in. There are no commercial uses in the residential areas, but these areas are still within walking distance of the core.

Outside of the Core, Transitional, and Residential areas of the UDA, other planning areas of the City, and of Henry County, will continue to focus on lower density residential, environmental conservation, agriculture, and other uses. These other uses will be governed by other sections of appropriate comprehensive plans, as well as by other planning documents and growth management efforts.

The Core Area: The Town Center

The Town Center is the geographical and functional heart of the community. Neighborhood gathering, recreation, shopping, and transportation are all focused on this core area. Traffic patterns for automobiles and pedestrians also radiate from this central location. The Town Center should be seen as the heart of the City in much the same way as a Main Street, important crossroads, or set of downtown blocks forms the heart of many old Virginia towns and cities. The existing density and street pattern of Uptown exemplify the Core ideal. Streets are relatively narrow, with ample sidewalks, buildings are built close to the street, and parking is supplied on the street or in small lots behind or to the side of buildings. Martinsville should seek to expand and revitalize this area with additional commercial, residential, and institutional uses. The community as a whole should have a concentric relationship to the town center, with the densest development located within the core, condos and other attached units located nearby, and detached homes farther from the center.

Core standards should be used in the Baldwin UDA, and in keeping with the overall goals for TND development, should incorporate a mix of uses, while organizing these uses into a compact and walkable plan with ample public spaces.

Mixed Use

The principles of Traditional Neighborhood Design place commercial, civic, and residential uses in close, walkable proximity to each other, rather than separated into distant locations only within driving distance. The town center is the primary location where commercial uses can be mixed into the community, alongside, or collocated with other land uses. The town center should allow and encourage small retail, service, and office uses, located along walkable streets within the TND core. Commercial and civic uses should be designed to serve the needs of the immediate neighborhood, including dining, as well as serve customers traveling to the village center from other communities. The typical layout of such uses places retail and service uses at the street level, with office or residential uses above.

Yards and Setbacks

As with TND residential uses, commercial uses should be located close to or immediately at the edge of the sidewalk. Because the town center is designed with pedestrians in mind, shallow setbacks allow users to access the commercial uses quickly and safely, without crossing large parking lots. This arrangement also creates a sense of enclosure on core streets that adds to the appearance and vitality of the town center.

Within this arrangement, larger setbacks are possible, but should be reserved for certain cases. One such case is for important buildings such as museums, libraries, or other civic spaces where a plaza or other appropriate open space can add importance and interest to the building and surrounding streetscape. In another case, dining establishments can use a deeper setback to include outdoor dining space that will add vitality to the street. In both cases, these deeper setbacks should be used carefully and sparingly, with the overall pattern of the town center in mind.

Civic spaces
In addition to commercial and residential uses, the city core should include at least one civic space as a community gathering space for residents, or for community events. This civic space may take the form of a landscaped park, hardscaped plaza, or civic building such as a library, church, or government center. Such a civic space can provide an important relief from the density of the town center, and should be placed near the center of the city, or in a place of importance, such as at the termination of a street.

Parking
The village center is intended as a commercial area that caters more to pedestrians than do shopping centers in outlying areas. For this reason, parking in the town center should be carefully planned to allow access to core uses without harming the look or function of the area.

All streets within the town center, and within the city in general, should include on-street parallel parking. When off-street parking is necessary, parking lots should be implemented behind buildings. When street-front parking can not be avoided, parking lots should be screened from view with walls, fences, or landscaping. To facilitate these parking arrangements, shared parking strategies, public parking areas, and structured parking should be considered.

Transitional Area

The Transitional Area is meant to divide the active and highly commercial Core Area from quieter Residential neighborhoods, and should be used in the Baldwin and Sara Lee UDAs. Its primary function is as a bridge between the activity and high density of the core, and quieter, less dense TND residential areas. The Transitional Area will be primarily residential, but made up of more intensive residential uses such as apartments, condominiums, and town homes. The Transitional Area will also include a mix of commercial uses, but at a lower commercial density than in the Core Area. This area is the ideal location for small shops, restaurants, or offices that primarily serve the residences around them.

Development parameters for the Transitional area should seek to bridge those used in Core and Residential areas, including minimums and maximums established for building height, front and side yards, and other parameters.

Live-Work Units
The Transitional Area is a good place to allow live-work units, a type of commercial and residential use in one, designed to have a ground floor shop, with an apartment or townhouse on floors above for the shop owner or operator. These units are typically associated with small startup businesses that are ideal for the TND scale and transitional area.

Residential Area

These guiding principles for TND residential neighborhoods are intended to promote the positive qualities of older Martinsville neighborhoods, and in-town neighborhoods in other Virginia towns and cities. These principles should be used in areas of both the Baldwin and Sara Lee UDAs, and can be incorporated into the City's Comprehensive Plan or a separate TND Design Guidelines Manual. Implementation regulations and standards may be introduced into a new zoning district consistent with the purpose and intent of Section 15.2-2223.1 of the Code of Virginia.

Lot Size

TND residential lots are necessarily smaller than lots in many typical suburban developments. Smaller TND lots put houses closer to each other, and closer to the city center, in order to preserve walkability in a more compact community. The result is a given number of residential lots occupying less total acreage than with typical suburban construction. The TND community should include a wide variety of lot and house types at a variety of sizes, from small town house lots near the city center, to small single family detached lots farther from the core.

Final lot sizes should be based on careful master planning, as well as market demand for TND residential uses. The examples shown here serve as a guide to a variety of potential lot sizes. These lots vary from 18' wide townhouse lots to 80' wide single family residential lots.

Yards and Setbacks

In order to achieve TND density and walkability goals, houses in a TND community are built closer to the street, and closer to each other. Within the narrow, pedestrian oriented streets of a TND, an appropriate residential front yard may be as little as 10 or 15 feet. TND communities also often have a maximum building setback (for example, 20 feet) in order to allow variation, while also maintaining a regular and ordered appearance within the neighborhood. In the lot examples below, the minimum setback is 10 feet, and the maximum is 20 feet.

Relegated garages and parking areas

As with parking in the core area, residential parking areas and garages should be established in a way that make vehicle access convenient, but without harming pedestrian access. In most cases, TND communities are designed with mid-block alleys, allowing access to garages at the rear of residential lots, as illustrated in the lot types below. Also shown below are options for front access lots that attempt to maintain TND principles, including driveways shared between two houses, and side yard driveways to access rear lot garages.

Lot mix

In order to recreate the type of successful neighborhoods found in many established towns and cities, Traditional Neighborhood Development projects must maintain a careful balance between housing types and sizes. In typical suburban neighborhoods where only a few (or only one) home type or design is allowed, the result is the overwhelming sameness seen in many tract housing developments. While this mix will necessarily be influenced by market demand, various house types (single family, town home, and condo) and sizes should be mixed together generously to give the TND neighborhood a feeling of originality and variety.

Economic Development Area

Just as the mathematical model establishing and projecting UDA size encourages the City to recognize non-TND land uses that may still be important to the overall function on a community, TND land use planning should not completely rule out certain economic development activities that are not traditionally included in Traditional Neighborhood Design. These uses might include light manufacturing uses, service uses, or larger commercial development. While these uses are not traditionally compatible with TND planning, or with strict UDA definitions, they may be incorporated into a larger city plan as a thoughtfully planned exception, and should not be excluded outright without careful consideration.

VII.

Martinsville
A CITY WITHOUT LIMITS

- TND Design Guidelines -

VII.

TND Design Guidelines

This section of Design Guidelines is intended to provide guidance on the physical elements of Traditional Neighborhood Design. Because development within Uptown Martinsville will involve a great deal of infill, redevelopment, and adaptive reuse, these guidelines, as well as the form of existing development in Uptown should guide future growth. Other lot, street, or utility designs can work just as well, but should strive to match the existing character of Uptown.

Residential Lots

The model lot types included here prescribe sizes and setbacks much like the City's existing zoning ordinance, but tailored for TND residential neighborhoods. These lots, in general, are similar to those found in residential neighborhoods close to Uptown. They are, however, much smaller than those found in outlying neighborhoods and typical suburban developments, have smaller setbacks from the street, and also include maximum setbacks to create a consistent street wall. This section includes the following six lot types:

- *Cottage Lot*
- *Village Lot*
- *Neighborhood Lot*
- *Suburban Lot*
- *Townhouse Lot*
- *Live-Work Lot*

Streets

The more compact forms of development found in Uptown, and generally in TND and UDA planning rely on more compact street designs. These street designs also strive to be complete streets, that is, streets that work for cars, pedestrians, and bicycles alike. In their overall layout, TND streets should aim for a grid pattern with many connections to facilitate pedestrian movement.

- *Thoroughfare*
- *Village Street*
- *Residential Street*
- *One Way Street*
- *Ally*

Finally, this section includes basic guides for other TND elements, including street furniture, fences, stormwater, and utilities. As with all TND elements, these features should be specifically designed for the compact nature of TND communities.

TND RESIDENTIAL LOTS

The following examples show potential TND lot sizes and layouts. The lot sizes vary from town home lots to larger single family lots, and include the reduced setbacks and pedestrian orientation that are typical of TND communities. TND projects should include a mix of lot types and sizes within the development, within neighborhoods, and even within individual blocks.

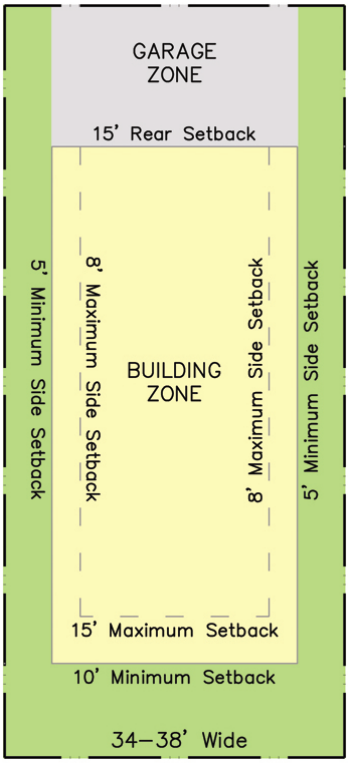
Final lot types and requirements and designs should be sensitive to existing and projected housing demands and be based on existing neighborhoods, and an appropriate TND plan each project.

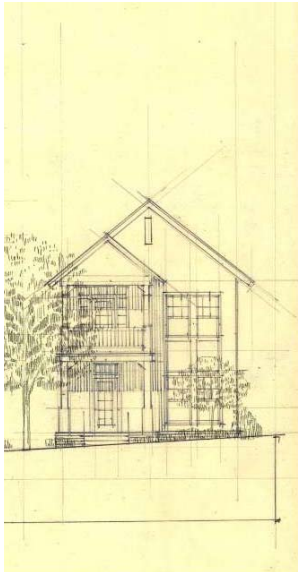
TND Lots

A prevalent theme in successful American TND models is the use of rear loading for residential lots. Of course, this theme among TND developments is drawn from the prevalence of alleys within successful residential neighborhoods in some of the city's most well-liked old cities. The use of alley access has the advantage of allowing an unbroken streetscape, including eliminating conflicts between pedestrians and cars pulling into and out of driveways. In addition, the alley provides a convenient utility or service access, including a more attractive way to deal with trash pickup.

Most TND communities are designed to include mid-block rear alleys like the ones shown here. These alleys allow access to garages at the rear of residential lots. Additional parking within lots, trash collection, and other needs can also use these alleys. These lot examples show a minimum front setback of 10 feet, and a maximum front setback of 20 feet. Establishing a minimum and maximum setback allows design flexibility and variation, while also maintaining an organized and cohesive look within the neighborhood. Side setbacks shown here are 6 feet for each lot, for a minimum of 12 feet of separation between houses.

Cottage Lot:

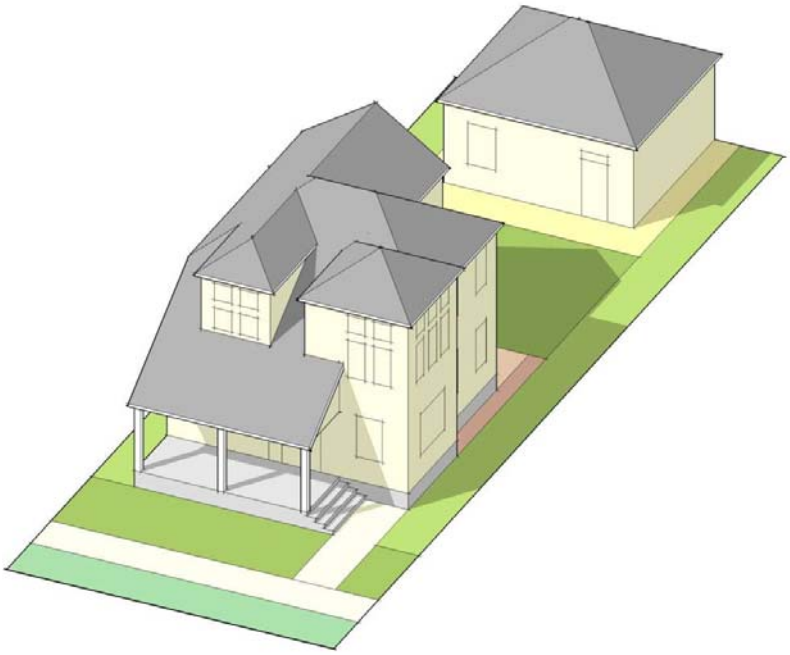


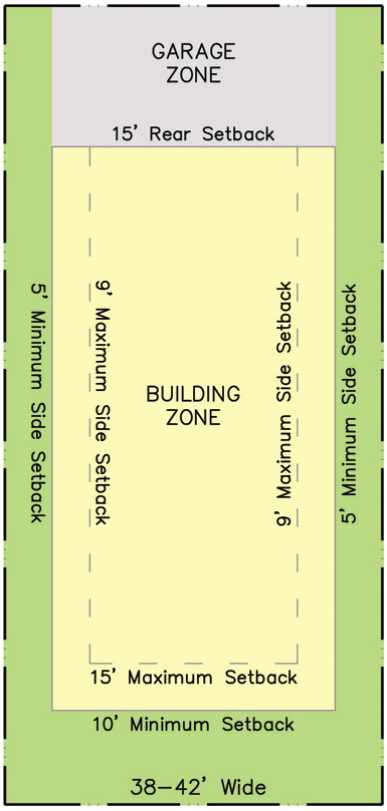


Cottage Lot Dimensions:

Lot Width:	34 - 38'
Lot Depth (min.):	80'
Front Yard Setback (min.):	10'
Front Yard Setback (max.):	15'
Side Yard Setbacks (min.):	5'
Side Yard Setbacks (max.):	8'
Rear Yard Setback:	15'

Village Lot:

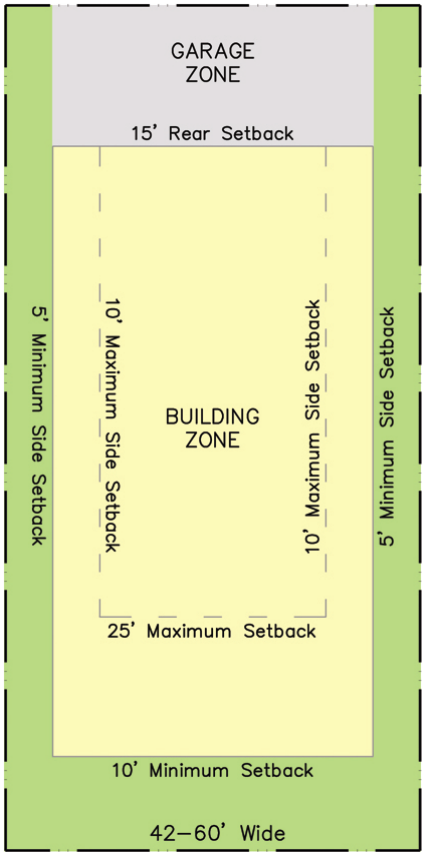


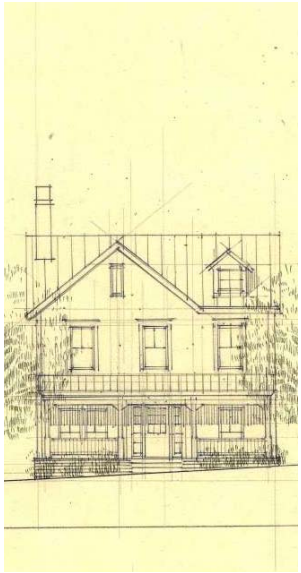


Village Lot Dimensions:

Lot Width:	38 - 42'
Lot Depth (min.):	85'
Front Yard Setback (min.):	10'
Front Yard Setback (max.):	15'
Side Yard Setbacks (min.):	5'
Side Yard Setbacks (max.):	9'
Rear Yard Setback:	15'

Neighborhood Lot:

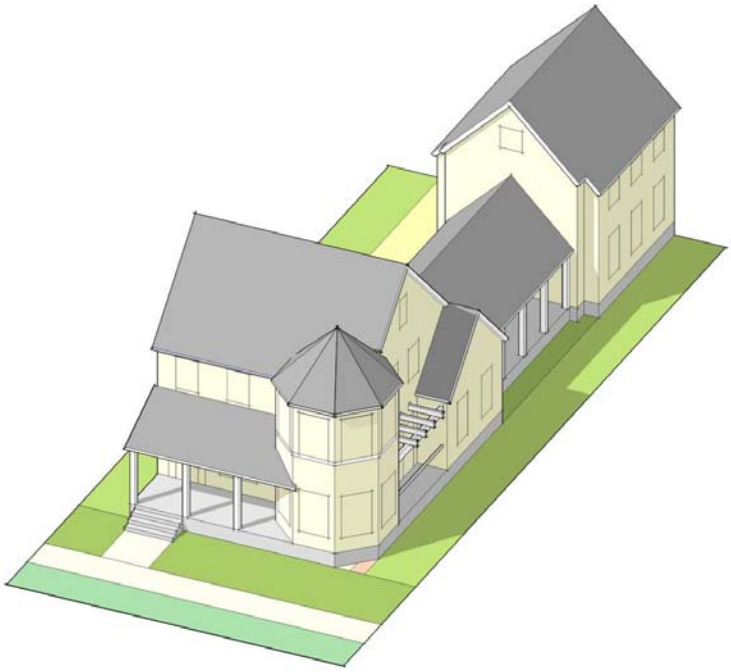


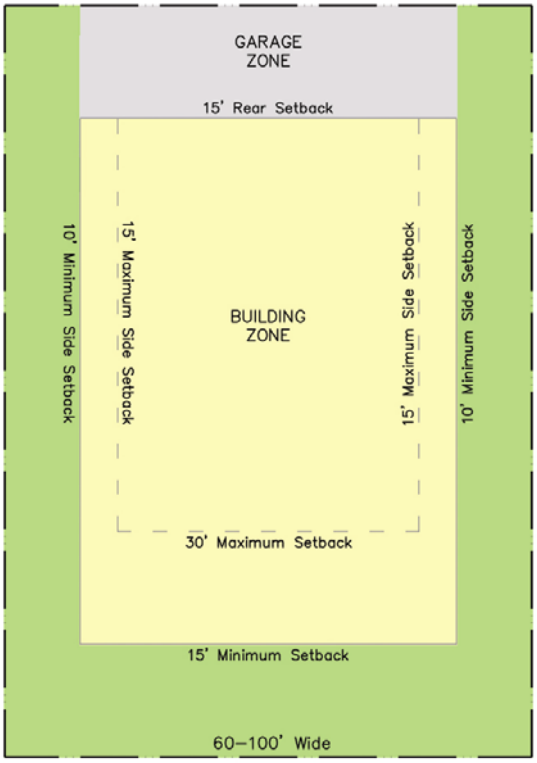


Neighborhood Lot Dimensions:

Lot Width:	42 - 60'
Lot Depth (min.):	90'
Front Yard Setback (min.):	10'
Front Yard Setback (max.):	25'
Side Yard Setbacks (min.):	5'
Side Yard Setbacks (max.):	12'
Rear Yard Setback:	15'

Suburban Lot:

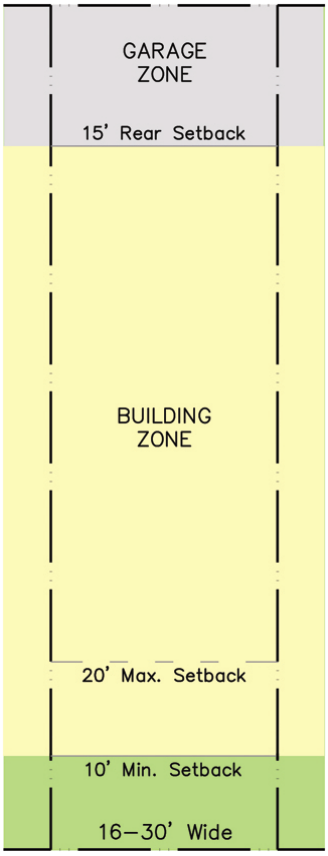


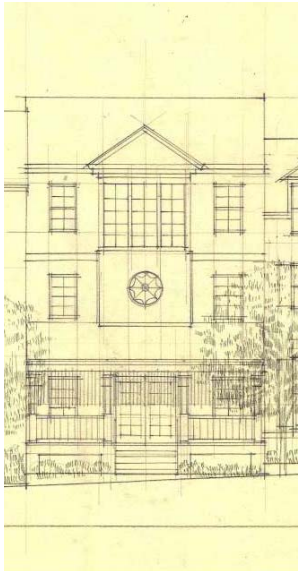


Suburban Lot Dimensions:

Lot Width:	60 - 100'
Lot Depth (min.):	100'
Front Yard Setback (min.):	15'
Front Yard Setback (max.):	30'
Side Yard Setbacks (min.):	10'
Side Yard Setbacks (max.):	15'
Rear Yard Setback:	15'

Townhouse Lot:

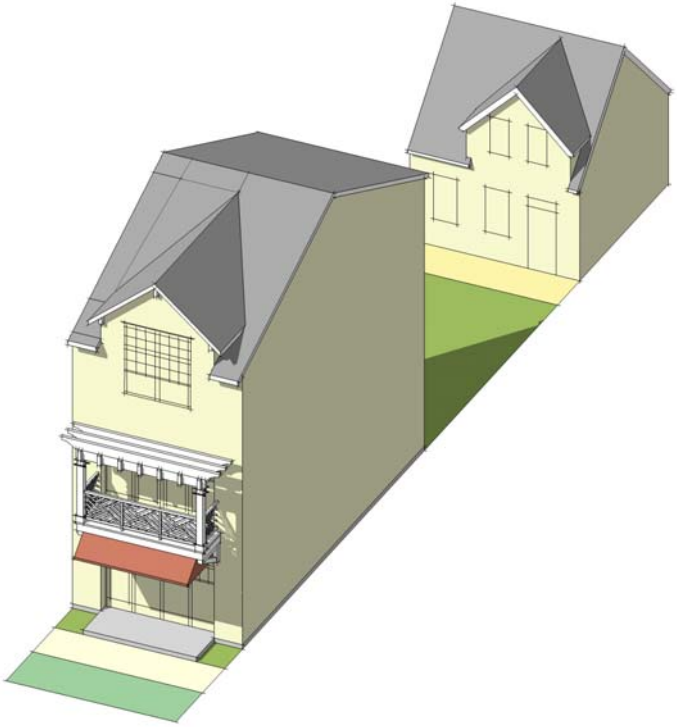


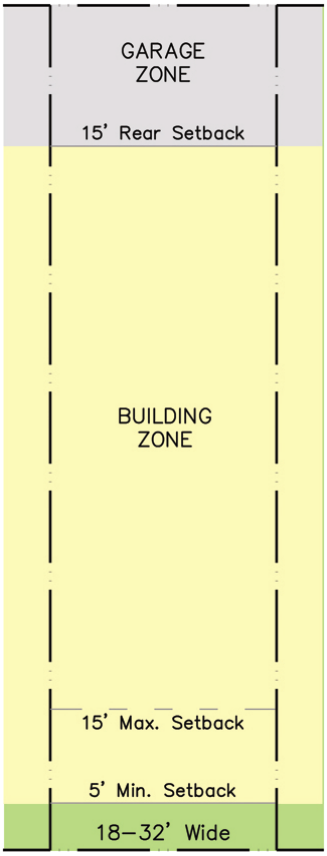


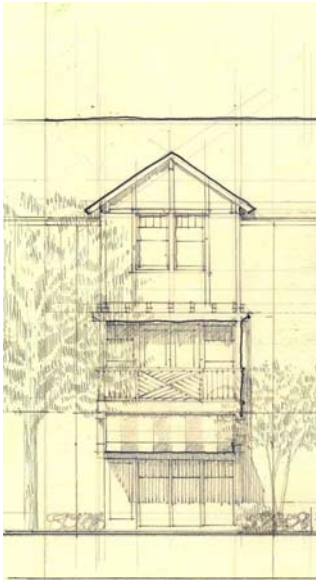
Townhouse Lot Dimensions:

Lot Width:	16 - 30'
Lot Depth (min.):	90'
Front Yard Setback (min.):	10'
Front Yard Setback (max.):	20'
Side Yard Setbacks (end unit - min.):	5'
Side Yard Setbacks (end unit - max.):	12'
Rear Yard Setback:	15'

Live-Work Lot:







Live-Work Lot Dimensions:

Lot Width:	18 - 32'
Lot Depth (min.):	85'
Front Yard Setback (min.):	5'
Front Yard Setback (max.):	15'
Side Yard Setbacks (end unit - min.):	5'
Side Yard Setbacks (end unit - max.):	12'
Rear Yard Setback:	15'

Front Access Lots

While residential lots served by alleys are predominant in well-planned neighborhoods, lots with vehicle access from main residential streets are still possible within TND principles, and may be necessary based on market demand, or on physical site features like topography. Even in cases where vehicle access must come from a street rather than an alley, steps should be taken to preserve the walkability and density of the neighborhood by sharing driveways, using side yard driveways to access garages behind the home, or for corner lots, accessing parking or a garage from the more minor of the two fronting streets.

TND STREET FEATURES

The streets of Traditional Neighborhood Developments are necessarily different from the streets in conventional suburban developments. Because the density of the TND encourages walking, biking, and general community activity, the streets of the TND are designed more completely than those of the conventional suburb. The concept of "complete streets" should focus on the following major objectives:

- Continuity of street design throughout the community.
- A hierarchy of street scale to emphasize important connections or areas
- Connectivity of pedestrian and vehicular infrastructure
- Standardized landscaping as an aesthetic and functional element of the street
- Building frontage guidelines to create an ordered and uniform street wall.

Over the past several generations, new streets and roads have featured abnormally wide pavements and broad, clear shoulders, a condition that promotes high speeds. In order to make TND streets safe for pedestrians and cyclists, the speed of cars is slowed somewhat. Additional features are also added to the street to increase the safety and comfort of pedestrians, as, well as to make for a more visually interesting environment.

Narrow lanes and streets

By narrowing driving lanes, the TND street slows drivers to speeds that are safer for cars, pedestrians, and cyclists alike. Due to the increased density of TND communities, slower speeds do not necessarily mean longer trips, as destinations are much closer. In many suburban areas, lane widths are a minimum of 16 feet, while TND and city streets typically specify lanes of 12 feet or less. The grid, or network, street pattern typical of TNDs also divides traffic between multiple small roads, rather than combining traffic onto multilane collector roads as in suburban locations, meaning fewer lanes for pedestrians to cross and generally safer conditions. Traffic calming techniques, including speed bumps or bulb-outs at intersections, can further slow traffic and protect pedestrians and cyclists.

Sidewalks and crosswalks

The key feature of TND streets is that they should be designed for multiple users, not solely for drivers. The streets within a TND community should all have sidewalks, almost always on both side of the street. Sidewalks are often four to five feet wide in residential areas, and separated from the street by a planting zone. This separation gives the sidewalks a safer feel, removed from moving cars. Given their importance in supplementing the civic spaces in the community, commercial street sidewalks must be much wider to accommodate busier uses, and may also provide for café space. Crosswalks must be clearly marked within the street. The use of contrasting materials, or hardscaping, such as brick or stone can make crosswalks stand out, as well as signal to drivers to slow for pedestrians.

Street trees

The presence of evenly spaced trees along a street creates a sense of enclosure that slows traffic, while also providing shade to pedestrians in warm climates, and making for a generally more attractive street environment. On residential streets, trees are commonly planted in a four to eight foot planting zone between the street curb and sidewalk. For commercial streets, trees may be planted in planting beds, or may be installed in tree grates to create additional sidewalk space.

On street parking

In contrast to typical suburban construction that includes both roads and large parking lots on individual commercial parcels, TND streets are designed to include on-street parking. This parking arrangement works toward the TND community's land use goals, as well as its goals for multi-use streets. By parking within the street rather than on individual parcels, the TND can reach much higher densities. In addition, a row of parked cars forms a buffer between moving traffic and pedestrians to give sidewalks a safer and more pleasant feel.

Buildings close to the street

Instead of the minimum setback lines established by traditional zoning codes to ensure that buildings aren't built too close to the street, TND communities are often governed by build-to lines to ensure that structures aren't built too far back from the street. Shallow front setbacks help TNDs achieve their goals of higher density, as well as their street design goals. While in a car-only suburb, buildings near the street might block sight lines and slow traffic, TNDs desire slower traffic, as well as convenience for pedestrians. With closely set buildings and on-street parking, pedestrians do not have to cross parking lots to reach the fronts of buildings as they would in suburban settings.

Street furniture

An additional enhancement of TND streets over traditional suburban streets is the provision of street furniture. Street furniture includes benches, bicycle racks, bollards, planters, and other accessories placed on or near TND streets and sidewalks for the convenience of non-automobile travelers. At the same time, features not friendly to pedestrians and cyclists, such as trash pickup are often handled in alleys or other off-street locations.

TND STREETS

Because of their narrower pavement width, on-street parking, and other pedestrian amenities, Traditional Neighborhood streets are necessarily different in section and overall design from typical suburban feeder or collector streets.

The following examples show five types of TND streets, for use within appropriate areas of master planned TND communities. These examples illustrate potential street sections that include travel lanes, landscape areas, and sidewalks within a public right of way.

TND "complete street", with room for driving, parking, and walking, as well as landscaping.

Unlike suburban streets with deep driveways and garages fronting the street, TND accommodates garages along rear alleys.

Thoroughfare

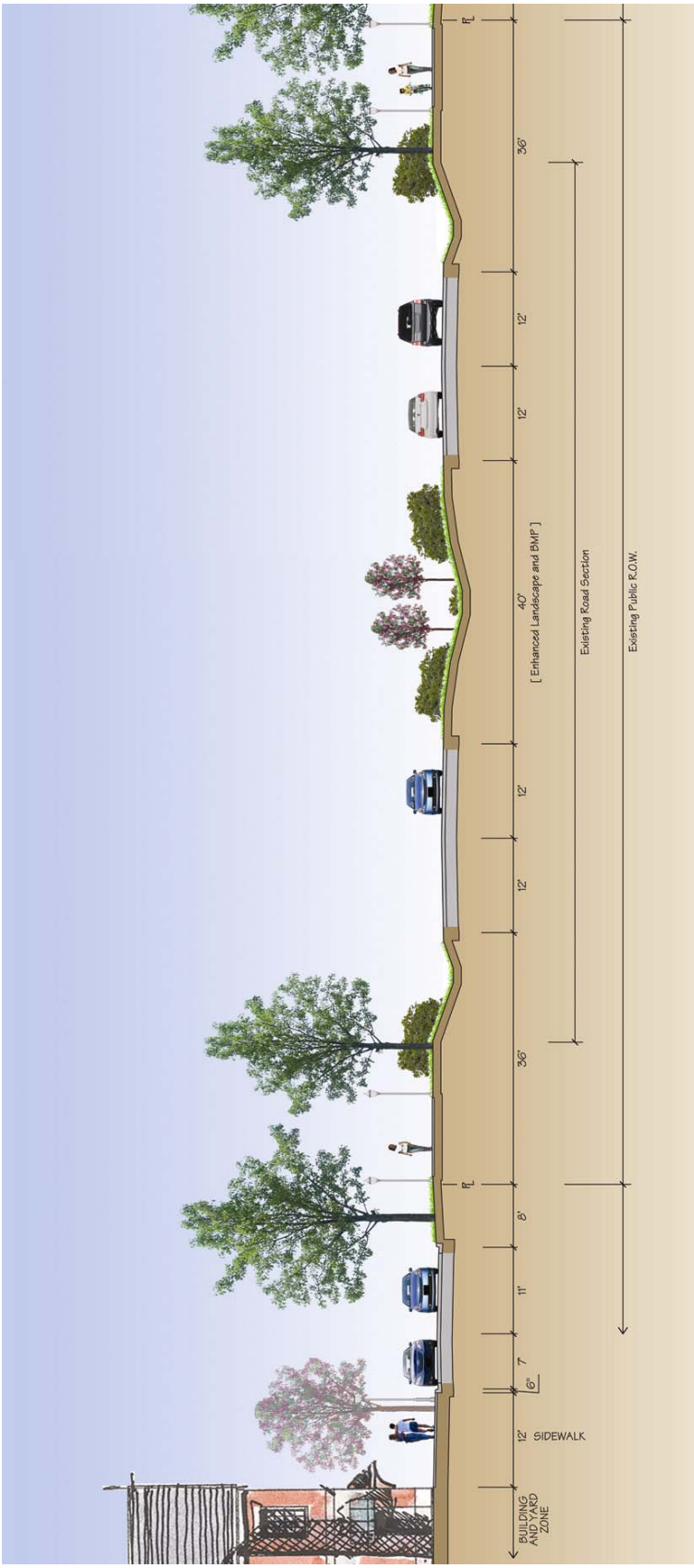
A constant question when if comes to TND development is how to address major, existing transportation corridors like Market Street or Commonwealth Boulevard near Uptown. The same traffic calming measures that are applied to new TND streets often can't be applied to these roads due to highway requirements or to the importance of these routes to the larger community and region.

However, improvements can be made to major roads to make them more functional within TND zones, including pedestrian and landscape upgrades, to turn a collector road into a proper boulevard. Pedestrian access can still be provided along major routes by implementing sidewalks or walking and biking trails sufficiently removed from the roadway. These paths should be wider than neighborhood sidewalks, and allow for short walking trips, as well as longer bicycle trips, including commuting. Landscaping can be added to major routes in the form of uniformly spaced street trees, as well as screening plants along pedestrian paths and right of way edges.

Over time, some major routes can be transformed from high-volume arteries to community thoroughfares in order to compliment new, mixed use development in the UDA.

Movement:	High-volume, two way traffic, divided highway
Intersections:	Signalized intersections
Location:	Existing major collectors and regional transportation routes connecting towns and significant developments
Speed:	35 - 45 mph
Lanes:	Multiple lanes in each direction, variable widths, often 12'+
Right of Way:	Existing, variable
Parking:	No on-street parking
Sidewalks:	Sidewalks or multi-use trails, variable width
Paved Edge:	Ditch section (rural and suburban areas) Curb and gutter (urban areas and new construction)
Landscaping:	Street trees and screening
Hardscaping:	Delineated crosswalks, street lights

Model Thoroughfare Street

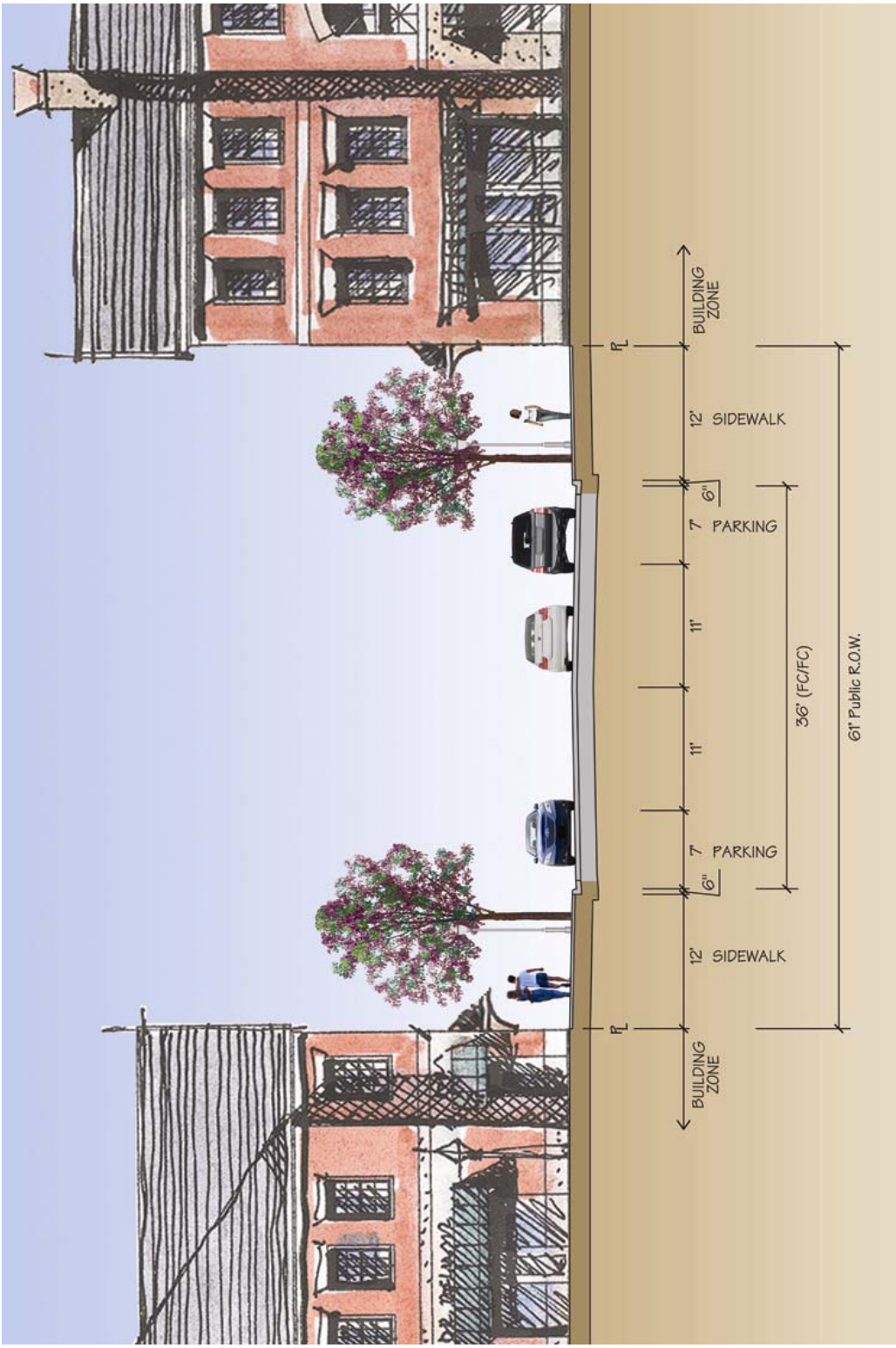


Village Center (Uptown) Street

One of the most important features of Traditional Neighborhood Design is a clearly defined center like Uptown. This center is often made up of a mixed use street or crossroads with retail, office, and residential uses in multi-story buildings, not unlike Main and Church Streets, or Main Street development in traditional Virginia towns. This street design provides a framework for such a mixed-use arrangement by being as much a street for pedestrians as for cars. The wide, shaded walks shown here support retail shopping and an active pedestrian environment. Street furnishings should be provided, in the form of benches, streetlights, and other amenities, and buildings should be built at the sidewalk's edge, with setbacks granted for café seating or civic gathering spaces. Ample parking is provided at the curb, and may be supplemented by additional off-street parking.

Movement:	Two way traffic
Intersections:	Signalized major intersections Unsignalized minor intersections
Location:	TND core areas with commercial and mixed uses
Speed:	25 mph max
Lanes:	One lane in each direction, 11' lanes
Right of Way:	61' (variable per conditions: 58'-70')
Parking:	On street parallel parking, both sides of street
Sidewalks:	12', both sides of street
Paved Edge:	Curb, or curb and gutter; underground drainage
Landscaping:	Street trees in grates, appox. every 40'
Hardscaping:	Delineated crosswalks, street lights, bollards

Model Village Center (Uptown) Street

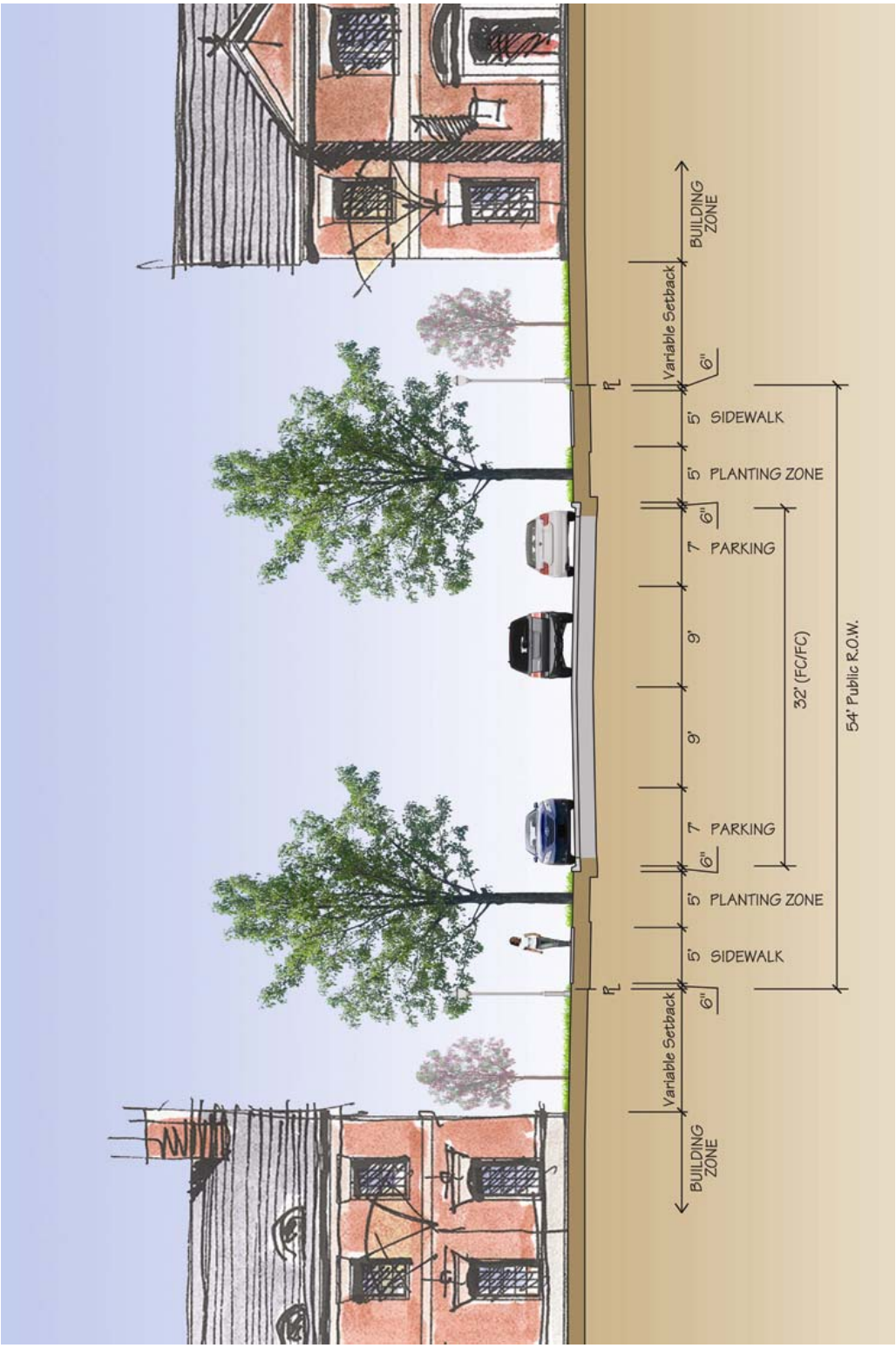


Residential Street

Residential streets within Traditional Neighborhood Developments must provide convenient vehicle access to neighborhoods, but must also be conducive to a quiet and safe neighborhood character. This street design can be used as the primary public street within TND residential neighborhoods. It serves as the neighborhood's spine, providing access to residential blocks and connections to the mixed-use core and external roads. The section design is compact, with narrow lanes that slow vehicle speeds to create a quieter neighborhood environment that is safer for pedestrians. This street section design includes sidewalks on both sides, separated from on-street parking and travel lanes by landscape and tree planting zones.

Movement:	Two way traffic
Intersections:	Unsignalized intersections
Location:	TND residential and transitional areas with residential uses
Speed:	25 mph max
Lanes:	One lane in each direction, 9' lanes
Right of Way:	54'
Parking:	On-street parallel parking, both sides of street
Sidewalks:	5', both sides of street
Paved Edge:	Curb, or curb and gutter; underground drainage
Landscaping:	5' planting strip behind curb Street trees appox. every 40'
Hardscaping:	Delineated crosswalks

Model Residential Street



One Way Street

Within the TND, a one way street is sometimes desirable, whether it is necessary to save space, improve traffic organization, or increase pedestrian safety. It is best though, that one way streets be used sparingly, and only for short distances, as they make it harder for vehicles to navigate, especially for those unfamiliar with the area. When a one way street is used, landscape quality and pedestrian amenities should not be sacrificed, even though the street might be of minor importance to cars.

Movement:	One way traffic
Intersections:	Unsignalized intersections
Location:	TND residential, commercial, and transitional areas with short blocks length, and low expected traffic volumes
Speed:	25 mph max
Lanes:	One lane only, 13' lane width
Right of Way:	42'
Parking:	On-street parallel parking, one side of street
Sidewalks:	5', both sides of street
Paved Edge:	Curb and gutter (urban areas and new construction)
Landscaping:	Street trees and screening
Hardscaping:	Delineated crosswalks

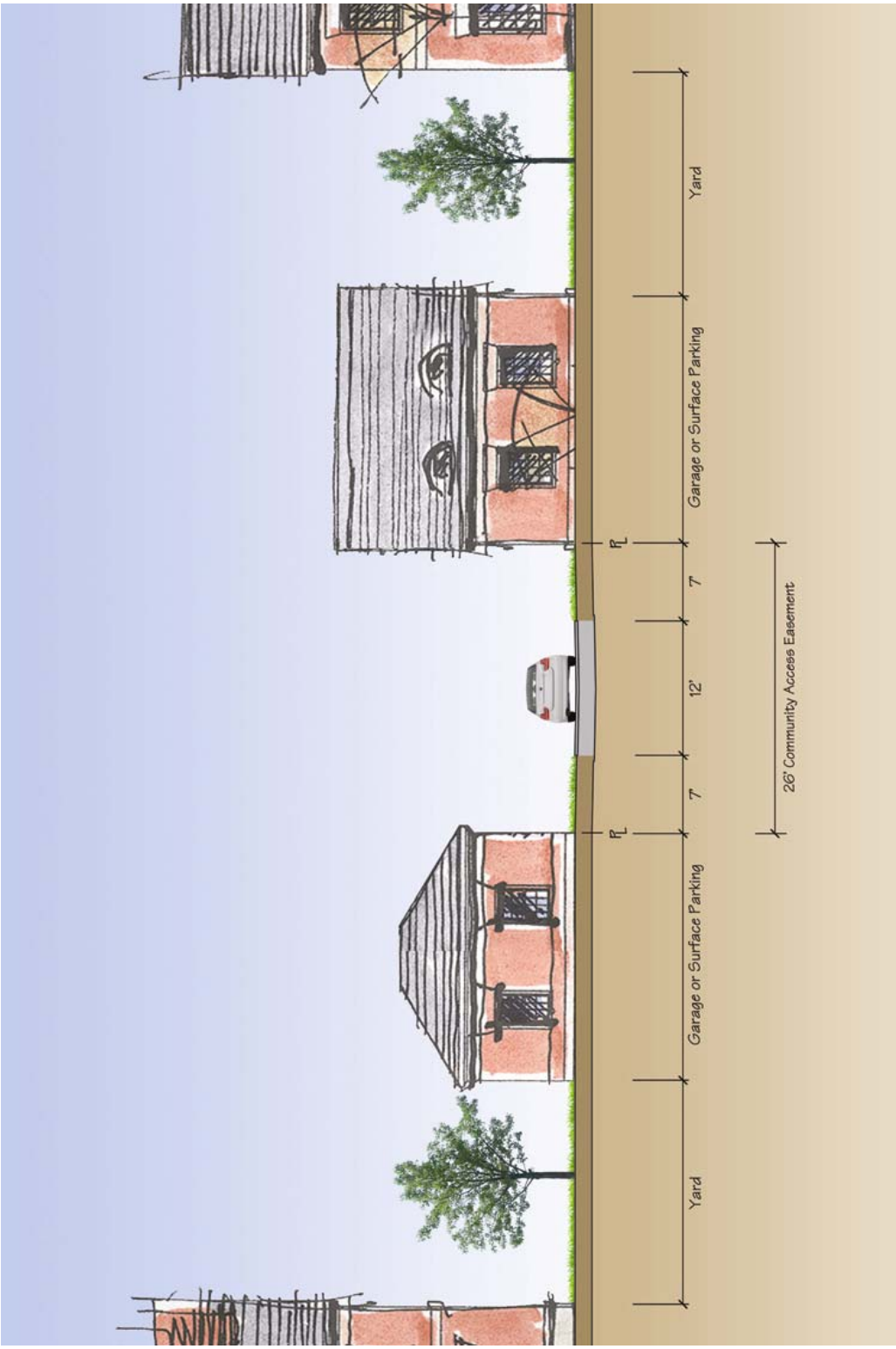
Model One Way Street

Alley

The goal of the TND street is to add amenities that increase the street's usefulness to all street users while removing certain street elements that obstruct non-car street users. The use of alleys helps to relocate some street elements that obstruct pedestrians, yet are necessary to the function of the neighborhood. Alleys are narrow, very low volume vehicular paths located mid-block to provide access to the rear of TND homes or businesses. In TND construction, garages are located on the alley, as is any off-street residential parking. Alleys may also be used for trash pickup, utility service corridors, or occasional loading zones. The alley may be maintained as a private street under the authority of a home owners association, or in some circumstances, dedicated as public access. With utilitarian functions moved off of the main street, the usefulness and attractiveness of the neighborhood street is enhanced.

Movement:	Very low volume, two way traffic
Intersections:	Unsignalized
Location:	Limited, mid-block for rear garage or service access
Speed:	5 mph optimal
Lanes:	Single, unmarked 12' travel way
Right of Way:	Private access easement, variable width
Parking:	No on-street parking
Sidewalks:	No sidewalks required
Paved Edge:	No curb
Landscaping:	None required
Hardscaping:	None required

Model Alley Street



Other TND Features

Pedestrian Improvements

Any development within an Urban Development Area should function as a pedestrian-friendly environment favoring Traditional Neighborhood Design precepts in which residents have convenient walking access within the development, as well as access to amenities, goods, and services in other parts of the community. Any TND development proposal should include standards for the location and design of all sidewalks and trails necessary for complete pedestrian accessibility throughout the community.

Sidewalks should be provided along all public streets within the UDAs. Sidewalk locations, as well as design and construction details, should meet all state and local requirements for adoption into the public street system, and should also meet ADA requirements where applicable. Sidewalks should generally be at least 3 feet in width, with wider sidewalks necessary in the most dense and active areas of TNDs. Crosswalks should also be included, and should be well marked.

Pedestrian trails can be provided within public spaces and common areas, forming a more passive off-street circulation system connected to the traditional sidewalks located in the public street rights-of-way. Whereas sidewalks follow the streets and are built of durable materials, paths might curve throughout parks and open space and be built of gravel or other natural materials.

Fences and Walls

In general, Traditional Neighborhood Development rules should approach fencing with broad flexibility. The design of fences for residential neighborhoods should be coordinated to the extent possible to maintain an ordered look to neighborhoods. Fences should also be built of quality, durable materials. Walls, whether for privacy or as a landscape retaining wall, should be built of quality, attractive materials, and designed with the overall look and feel of the neighborhood in mind.

Benches and Other Hardscape Improvements

Benches, tables and other outdoor furnishings are an amenity to pedestrians in any TND, and should be provided in public parks and civic spaces. The style of these should complement the overall look of the neighborhood. Trash receptacles should be provided in parks and other places where people are expected to gather.

Building Form and Massing

The objective of architectural design for a TND project should be to ensure a continuity and compatibility amongst all architectural elements and to maintain a high level of quality and design excellence. While it is not the intent to legislate taste, building forms in a TND community should achieve compatibility in scale, visual order, rhythm, and proportion. The scale of building elements (roofs, doors, windows, porches, columns) should be chosen with the pedestrian in mind and should be proportioned to building's height and volume. Visual order is achieved through a consistent use of these elements in individual buildings. The coordinated repetition and massing of building forms and architectural elements achieves a proper rhythm of neighborhood buildings.

Landscape Design

One of the distinguishing features of Traditional Neighborhood Development is the coordination of streets, buildings, and landscape into a cohesive whole, rather than a group of disparate parts as in typical suburban development. The coordination of these elements is essential to the livability and vitality of Virginia's most attractive towns and cities, and is sorely missing from others. Landscape forms associated with streetscapes, buffer areas, and other landscape zones will be important ingredients in the success of UDAs as ordered village areas, rather than merely intensive subdivisions.

This section establishes landscape expectations for projects within Urban Development Areas, including design concepts, types of plants, and maintenance standards.

Grading and Building Sites

The compactness of Traditional Neighborhood Design, including its emphasis on pedestrian activity and buildings sited closer to streets, means that relationships between buildings and landscape are much more obvious than in other types of development. Landscape improvements within the UDA's major development categories; Village Core areas, Transitional areas, and Residential areas, should focus on complementary landscape forms, patterns, and materials to create an ordered appearance.

In general, it is desirable for residential dwellings to be slightly elevated above public streets to improve aesthetics, visibility, and site drainage. Where buildings are lower than street level, special landscape and hardscape attention should be given to the street's edge with private lawns, creative sidewalk placements, or civic spaces.

While not possible in every case, buildings within the same neighborhood grouping or cluster should have coordinated finished floor elevations and/or massing and details which relate the individual buildings to each other. Berms, when they are used, should be gently curved and rolling at an appropriate scale. Artificial-looking earth mounds are not recommended.

To reduce potential environmental impacts, site designs should minimize the extent of mass grading within the community. All site grading should be done in a way that preserves existing trees and vegetation when possible. A maximum slope of 3:1 around exterior building walls should be maintained, provided that retaining walls may also be necessary in some instances to preserve existing vegetation and to create an attractive landscape.

Existing natural areas, passive open spaces, and pocket parks situated outside building zones should be treated as parts of a community-wide system of open spaces to enhance the visual character of the community.

Plant Materials

The following standards should apply to plants, trees, and other landscape materials in order to create the desired visual harmony among the individual development areas within UDAs. All plant material should be selected from varieties that are native to Virginia whenever possible.

All streets within TNDs should have a regular pattern of street trees for aesthetic value, and to shade sidewalks. Street trees should generally be placed 40 to 60 feet apart, and planted in a landscape zone provided as part of the street section design, or in large, permanent planters or tree grates as necessary.

Ornamental trees should be provided in residential yards, parks, and in landscaped areas of the Village Core for accent and visual emphasis.

Evergreen trees should be used at strategic locations for screening and buffering due to their dense foliage, but also incorporated into landscaping in parks and civic spaces to enhance aesthetics during winter.

Deciduous shrubs should be used as accents on private residential lots, as well as in parks, commercial areas, and other community spaces. Shrubs can be used for visual interest, as well as for screening of items like utility meters and HVAC equipment.

Areas of grass and ground cover can be used in a variety of applications, including hillsides, as a way to control erosion and runoff, and park spaces for recreational use. Care should be taken to use grasses that require as little maintenance as possible.

Landscape Maintenance

Property Owners' Associations or Business Associations should be used to maintain streetscape and ornamental landscaping within condominium-type residential and business districts. Where parks or other open space are dedicated to public use, these spaces should be publicly maintained. Landscaping within other residential areas will be maintained by individual lot owners. In all cases, proper maintenance should be encouraged, with neighborhood covenants as necessary, to maintain an attractive and vibrant community life. By carefully choosing plant materials, including native species, at the outset, some maintenance effort can be saved.

Parks and Open Space

The TND master plan should establish the type and quality of an Open Space and Recreation System for civic space, parks, passive open space, recreation areas, buffer areas, and protected natural areas. In general, the open space and recreation area system in and around a TND should be located and designed to provide a range of opportunities for outdoor activities. TND projects should provide usable open space features that are within the TND pedestrian system. These open space and recreation areas should be interspersed throughout new development, and connections to existing parks, trails, or recreation sites should be made whenever possible. Centrally located and appropriately scaled neighborhood parks should be included in new TND projects. Streams, creeks, wetlands and other natural corridors located in or near UDAs or other in-town development should be preserved as Greenways or Stream Valley Parks. Park and open space areas should be permanently reserved for community use, and should not be occupied by residential or commercial buildings, parking lots, private residential yards, easements, setbacks, and streets except in support of recreation activities. A variety of open space types should be pursued throughout the community, including Parks, Greenways (or Stream Valley Parks), Squares, Plazas, Playgrounds, Community Centers, Trail Systems, Pocket Parks and Community Gardens.

1. *Stream Valley Park or Greenway: A natural preserve available for unstructured recreation. A park may be independent of surround building frontages. Its landscape shall consist of bicycle and/or pedestrian paths and trails, meadows, woodland and open shelters. Parks may be lineal, following the geographic form of natural corridors.*

2. *Green: An open space, available for unstructured recreation. A green may be spatially defined by landscaping rather than building frontages. Its landscape shall consist of lawn and greens, naturalistically disposed.*

3. *Square: An open space surrounded by public streets lined by buildings with entries and windows. It has trees at its edge to define the space and to provide shade and it is open at its center. It has both paved areas and grassy areas.*

4. *Plaza: An open space, available for civic purposes and commercial activities, that is spatially defined by building frontages. Its landscape shall consist primarily of pavement with street trees and such features as statues or fountains. Plazas shall be located at the intersection of important streets.*

5. *Playground: An open space designed and equipped for the children's recreation. Playgrounds shall be interspersed within residential areas. Playgrounds may be included within parks and greens, but generally should not be in Squares or Plazas.*

6. *Community Center: A combination of built and natural recreational features concentrated in one area or parcel including, club house building, restrooms, pools, tennis courts, picnic areas, and accessory facilities.*

7. *Trail System: A network of multi-modal (walking/bicycling) paths designed to provide distinct areas for recreational travel and use separate from traditional sidewalks. Trails can be constructed of a variety of material including, but not limited to concrete, brick, masonry paver, gravel, and mulch.*

8. *Pocket Park: A small park/open space centrally located amongst residential components for any project, whose main purpose is the provision of passive recreational opportunities. Though the space is required to be accessible from public infrastructure networks, no amenities are required or desired for such areas.*

Stormwater Management and Best Management Practices

A TND rezoning application should contain documentation satisfactory to the City that a system of best management practices (BMPs) and stormwater management (SWM) improvements can be implemented. Rather than constructing SWM/BMP facilities on a lot-by-lot basis, a more regional, comprehensive approach should be developed to address the stormwater runoff of the TND and its watershed. The environmental goal should be to make downstream runoff conditions better than current conditions. The use of contemporary Low Impact Development improvements is highly recommended.

In conjunction with a rezoning application, the applicant should be required to prepare a comprehensive Stormwater Management Master Plan in coordination with the City addressing the contributing drainage sheds intersecting the property. The study would include preparation of preliminary hydraulic and hydrologic engineering designs for an integrated system of on-site stormwater management facilities to further establish the feasibility of the stormwater or floodplain improvements as depicted on the master plan.

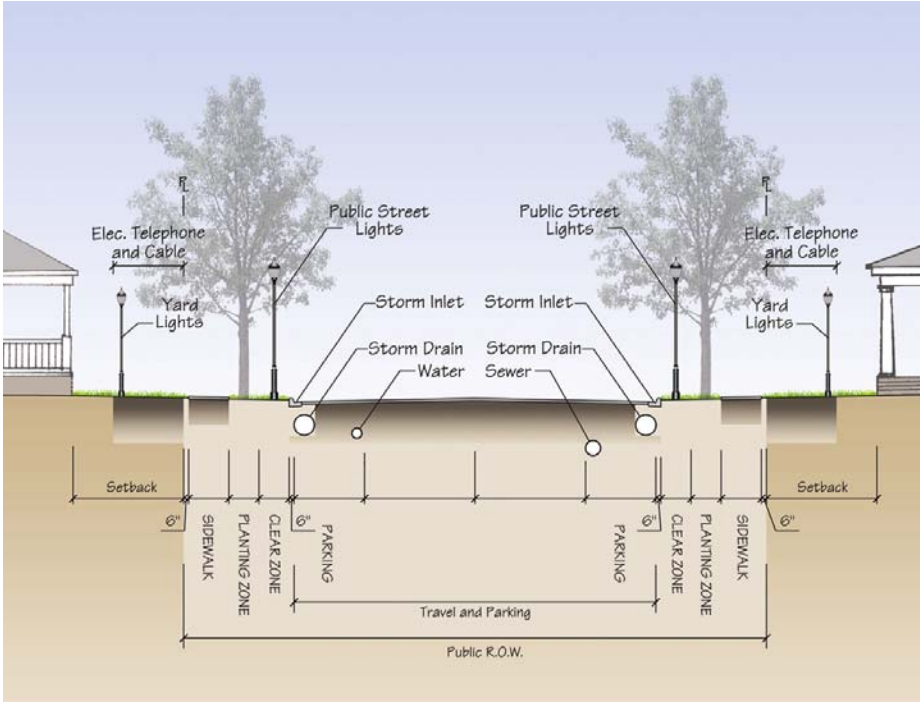
Where TND projects incorporate floodplains and stream valleys, the master plan should integrate the design for the stormwater management facilities into a comprehensive stream valley open space, parks, and trails system that benefits the entire community. In addition, the applicant should be required to develop a program for the perpetual maintenance of on-site stormwater management facilities, floodplain areas, and related improvements that is acceptable to the City.

From an environmental management standpoint, SWM and BMP facilities should be protected and maintained during the construction process, and, upon completion, they should be maintained by either a property owners' association or the City. It should be the responsibility of individual lot developers to provide this protection during construction and to ensure that both SWM and BMP capacity is maintained throughout. Where LID and BMP facilities are to be constructed on private lots (and which are not otherwise publicly maintained), the maintenance should be the responsibility of the individual lot owner.

Utilities

The goals for compact development set by the Urban Development Area legislation cannot be reached without the provision of similarly compact public water, sewer, drainage and other essential utilities. Highly coordinated designs for public utility systems require less space than would otherwise be consumed by conventional easements. Further, they allow homes to be placed on much smaller lots than would be necessary if they were to be served by only on-site well and septic systems. Traditional Neighborhood Design densities and street section configurations also mean that stormwater runoff will often be handled by a curb and gutter setup with underground piping to convey collected surface runoff, rather than by ditches. In addition to water, sewer, and stormwater, other infrastructure such as gas, electrical, communications, and television cable are typically provided in TND construction.

Utilities should primarily be located within public street rights of way in order to allow full use of buildable areas, facilitating the desired shallow setbacks typical of TND construction. In addition to these rights of way, utility easements may also be established within the rear alleys that will serve many TND neighborhoods. To achieve this goal, easements of reduced width as well as shared easements are appropriate for this type of neighborhood. In certain cases, common, shared, or overlapping easements for water, sewer, and drainage improvements will be needed to achieve the desired street sections and building lot placements. City officials will likely need to lead in the coordination effort, given the suburban mentality of many local utility agencies to protect their own easement territory.



VIII.

Martinsville
A CITY WITHOUT LIMITS

- Transportation Benefits of TND -

VIII.

TND Transportation: Benefits and Opportunities

Transportation Efficient Land Use

With its grid street pattern, streets designed for pedestrians and bikes as well as cars, and emphasis on placing commercial and residential uses in close proximity to each other, Traditional Neighborhood Development within the Uptown UDA has the potential to add to the area's already beneficial transportation framework. As it now stands, Uptown has the compact grid of streets typical of TND planning. The area has ample pedestrian facilities, but lacks the vitality and mix of uses to encourage pedestrian activity.

Encouraging Traditional Neighborhood Development patterns in Uptown can offer certain transportation benefits as this area of the City grows, including generating fewer, and shorter, car trips than the more suburban system seen along Commonwealth Boulevard and in other suburban areas. The rise of Traditional Neighborhood Development as a planning and land use trend over the past 20 to 30 years is due in part to its many advantages and benefits when compared to conventional suburban planning and development patterns.

The benefits of strengthened transportation planning in the Uptown UDA can extend to everyone who lives and works there, and also to local government and citizens of the larger region. Many of the benefits of TND streets can be measured in terms of increases in system capacity, greater choices to satisfy travel demands, shorter travel times, construction cost savings, and reduced maintenance. On the other hand, other (equally important) attributes are linked to less scientific quality of life, esthetic, and safety factors.

Reduced trip generation and internal capture

A well planned TND street network for Uptown has a distinct advantage over outlying transportation patterns in that it can reduce the overall traffic burden on a locality's regional traffic system as well as the number of vehicle trips that are generated by a given amount of new development. A main focus of TND communities is their mix of uses that combines residential, civic, institutional, and commercial uses into one area, as opposed to creating enclaves or isolated development modules each serving a different use. A resident of Uptown should be able to complete certain daily tasks, like grocery shopping, dropping a child off at school, or going out for a meal, without leaving the area. With tighter knit neighborhoods, the vehicle does not need to be used to satisfy each and every trip purpose.

In contrast, these same tasks in a single use suburban community would require leaving a residential development and driving on an arterial highway or major collector road to a commercial development. Trips by TND residents that are made without leaving the TND are called internal capture. These are trips that are shorter, more accessible, safer, and, in some cases, can be substituted by pedestrian trips.

When analyzing traffic impacts for new developments, the Virginia Department of Transportation allows for the possibility that up to 15% of all trips by TND residents will be internally captured. This means 15% less traffic placed on existing external roads, which can lead to savings in road widening, turn lanes, and signalization. However, actual case studies comparing TND to conventional suburban projects in Virginia and other states have realized even better rates of internal capture, with 20%-25% of trips staying within the TND.

In this way, a well planned mix of uses, with residences in closer proximity to employment and shopping needs, has the potential to reduce overall traffic on Uptown's major connectors by significant rates.

Increased transportation system capacity

The key difference between TND street patterns and those found in conventional suburban developments is TND's use of an interconnected grid of streets, while most sprawl subdivisions use a disconnected pattern of streets with many cul-de-sacs and several high-volume collector roads. The overall effect of the TND grid pattern is to divide neighborhood traffic between many small streets rather than concentrate it on a few large collector roads.

Traffic analyses employing commonly accepted Highway Capacity Manual calculation methods for these two types of street networks clearly reveal that a compact network of small interconnected streets has more traffic capacity than the same street area combined into large collector streets. Intersections, not travel lanes, control the capacity of a street system, and left hand turning movements represent the critical factor that impacts capacity reduction. The typical TND network reduces the loading of left hand turning movements by distributing traffic to and through a larger number of intersections, allowing the entire system to carry a greater load. The net benefit is fewer travel lanes, fewer traffic signals, and fewer traffic accidents while increasing overall system effectiveness.

Reduced traffic times and Less signal wait

While TND streets have many small, relatively quiet intersections, a locality's major collector and arterial roads typically have very large, complex intersections. All internal TND streets should be considered "local" with the express purpose of providing direct access to community land uses via narrow travel lanes with on-street parking. More complex collector intersections require multiple lanes, a variety of turning lanes, and traffic signal cycles for a variety of movements, all leading to longer waits at traffic lights and reduced system capacity. The transportation network goal should be to plan for sufficient intersections within the community in order to stay below the traffic warrant thresholds for signalization. When the TND pattern spreads traffic over several smaller roads, traffic at these intersections may fall below rates at which signalization is warranted, or, if a signal is necessary, its cycles will be less complex and less time consuming.

Relationship to regional traffic network

An additional feature of TND street patterns is the interconnections of adjacent TND developments. Sprawl subdivisions are typically self-contained, having a single entrance from a major collector road. This is common to many rapidly growing Virginia localities that have experienced increased frontage development pressure on their arterial highways but little in the way of contiguous collector and local street improvements. This means that to visit an adjacent development, a resident would have to drive onto a major collector road and then enter the adjacent development.

While traffic engineers ascribe high capacity ratings to arterial and major collector roads, in reality their functional capacity and operating speeds are often much less than predicted. Arterials located in locales that lack interconnectivity attract dense commercial growth along their frontage. In effect, traffic is funneled to commercial centers from a wide catchment area, creating traffic characteristics that are unbecoming to the original purpose of the arterial.

Regional arterial systems are not designed to function well with high levels of frontage access, but commercial traffic cannot be restricted unless local zoning laws become extremely onerous. The latter is fraught with political obstacles. The result is increased travel time and trip distance while further diminishing the capacity and function of the existing system. Over time, as arterial traffic increases, the trend is to add lanes to the existing system rather than building another way to access the developed commercial areas, such as recent improvements to widen the southern-most stretch of Route 17 in Uptown, and this rarely fixes the problem.

With TNDs, connections to adjacent developments are encouraged as part of an overall grid street system. In this system, a TND resident can access adjacent developments using internal streets built by the TND developers instead of using the external collector road that must be improved at public expense. An interconnected TND system also benefits by accommodating reasonable levels of diverted traffic movements when other peak-hour routes are operating at full capacity. In a region that grows by building multiple TNDs, regional traffic can be shared over many roads rather than crowding a single collector. In Uptown, TND growth might contain local traffic, preventing some car trips from ever needing to use outlying roads like Commonwealth Boulevard. The Virginia secondary street acceptance requirements (SSAR) provide effective guidelines for VDOT and localities to coordinate and promote interconnectivity between future developments.

Pedestrian and Non-car trips

The density, mix of uses, and connected streets that are key features of all TNDs make it possible to navigate new development, and possibly nearby areas, without a car at times. TNDs should ideally place new residential development within a walkable distance of new and existing commercial development. While this doesn't mean that cars aren't necessary in TND communities, it does mean that certain trips, for shopping, dining out, or visiting neighbors, might be short enough to consider walking or bicycling. The narrower TND street with a more compact intersection design and smaller curb radii better accommodates pedestrians and cyclists in a safe and comfortable way to make non-car trips more desirable. TND transportation guidelines encourage reduced lateral clearance between the street lanes and street

trees and other forms of landscaping, thereby creating a natural, more attractive form of traffic calming. Further, with a well planned, interconnected street system, pedestrians and cyclists have the option to select safer and quicker routes based on their knowledge of real-time traffic conditions in their neighborhoods.

The number of trips made without a car will vary widely depending on the features of the town cetner, as well as factors like weather. However, case studies of TNDs reveal high levels of internal traffic capture, showing that among people shopping and dining in TND commercial areas, as many as 18% had traveled there on foot. This represents an 18% reduction in traffic over single-use suburbs where no walking trips are possible due to long distances and unfavorable conditions between residential and commercial areas.

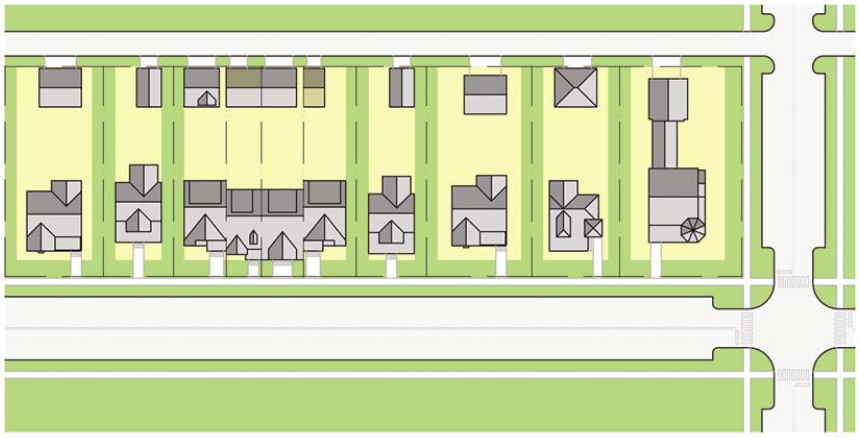
The challenge for future improvements in the Uptown UDAs will be to add to an already excellent pattern of city streets, while encouraging land uses that take full advantage of new and existing pedestrian facilities. Significant development proposals within the designated UDAs should plan for transportation facilities as they apply to (a) interconnectivity, (b) intersectional capacity enhancements, (c) upgrade of existing streets, and (d) integration of new street systems with existing streets.

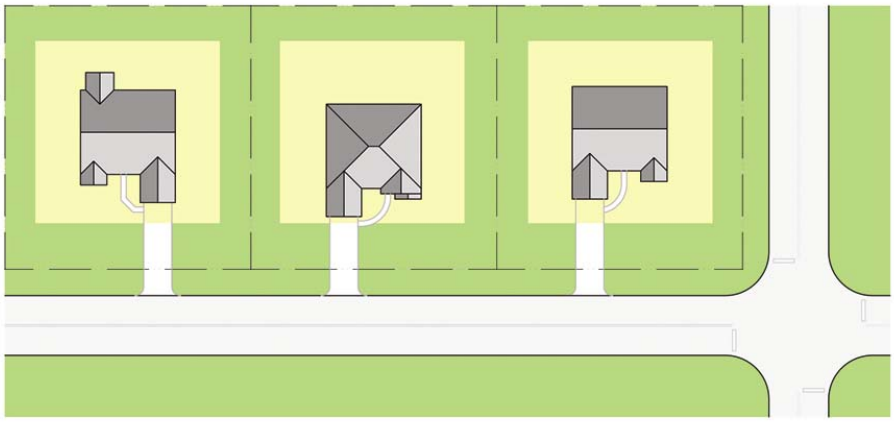
TRANSPORTATION & INFRASTRUCTURE SAVINGS

Shorter streets

Due to TND densities of four or more units per acre, a TND with a given number of units is much more compact than a conventional suburb containing the same number of homes. This means more homes on a given length of street. Individual house lots in this dense configuration have a much narrower street frontage than do conventional lots, and the grid orientation neighborhood streets reduces the sometimes meandering interconnections between suburban subdivisions.

The examples below show a hypothetical 420-foot street frontage in both a Traditional Neighborhood Development, and in a more typical suburb development. In the suburban model, wide streets lead to long driveways that access homes set well back from the street. Existing residential in Uptown tend to fit this model, with relatively large, underutilized and undermaintained lots. With lots at ½ acre each, in the below example this 420-foot section of street serves only 3 houses. The TND street has narrower lanes, but provides parking on the street. Houses are close to the street, with garages on an alley in the rear. With lots from 20 to 70-feet wide, the same 420' length of street accommodates 10 houses.





Narrower streets

Traditional Neighborhood Developments are typically designed around much narrower street cross sections than those found in conventional suburban subdivisions. These narrow streets serve to slow traffic, increase safety for pedestrians, help meet the community's goals of higher density, and also to lower infrastructure costs. These narrow streets of course require less surface pavement, but also save on foundation materials, pavement depth, turns lane length, and other factors due to their lower design speed. Existing narrow streets in Uptown, with ditch drainage and no sidewalks, could easily be upgraded to better meet the street section guidelines presented earlier.

On-street parking

Parking within the well-designed TND is primarily found along streets and not in large surface lots at the front of buildings as in many sprawling suburbs. This means less pavement overall dedicated to parking as parking lots provide spaces and aisles, while on-street parking uses the travel lane to serve the aisle function. Many conventional residential suburbs actually are planned for on-street parking, but with ample private driveway access in front of each home, the on-street spaces are very inefficient and rarely used. Outside of cost alone, this on-street parking solution is more attractive, brings buildings closer to the street, and serves pedestrians better than suburban methods.

More Efficient Utility Systems

Another result of TND density is the ability to serve larger numbers of homes with shorter lengths of utility infrastructure. As with roads, more homes are served by a given length of service for sewer, water, electric, and other public services. Storm drainage needs can be incrementally reduced by virtue of less pavement and impervious surface. While increased density may mean a more complex infrastructure within the TND, the greatly reduced length can greatly reduce capital and maintenance costs for these services.

In addition, narrower streets allow for shorter lateral stub-outs to individual lots for public water, sewer, electricity, gas and the like. For TNDs to achieve the desired intent, it will be necessary in many jurisdictions for VDOT, quasi-public utility agencies and local governments to rethink and revise suburban engineering standards for compact infrastructure, alignments, shared easements and rights of way, and reduced geometric requirements.

The combined effect of the instances of infrastructure savings mentioned here is to reduce the cost of building TND developments as compared to conventional suburban sprawl developments. This effect has been measured in a 2009 study for the EPA to be an infrastructure savings of between 32% and 47%. Also, while these benefits to transportation and other infrastructure and directly measurable, TND communities present additional aesthetic and quality of life benefits that, while difficult to measure, are no less important.

OTHER BENEFITS

Safer Streets

The inherently slower speed of TND streets, such as those presented earlier in this document, when compared to highways and suburban collector roads means greater safety for drivers and pedestrians alike. With cars slowed to reasonable in-town speeds, pedestrians are more easily seen by drivers and have more time to cross streets to reach their destinations. Slower automotive speeds also increase safety for drivers, with damage and injury reduced when collisions do occur. A study by Swift and Associates determined that the safest streets were those built 24 feet wide. Despite this, many suburban zoning codes require streets to be built at a minimum of 36 feet wide.

Transit Compatibility

The benefits of public transit are well established, including reductions in traffic and parking demand, as well as cost savings to the individual transit commuter. However, transit cannot deliver these benefits when combined with the low densities of outlying suburbs. A transit stop must be located within a short walk of a substantial number of homes or businesses in order to make the transit system useful. The compactness of TND and in-city neighborhoods like Uptown makes public transit a viable option.

Improved emergency response

Another safety issue presented by sprawling and disconnected suburban streets is their effect on emergency response by fire and rescue services. Sprawling suburbs mean longer distances to travel between fire and rescue facilities and some homes, while the disconnected nature of cul-de-sac streets means traveling indirect routes to answer calls. The proximity and connectivity of TND communities has the potential to shorten emergency response times.

Less time spent traveling

Density and mix of uses puts daily shopping, employment, and entertainment needs within much closer proximity to residential areas. This proximity reduces time spent commuting and adds to residents' free time.

Quality of life

Quality of life in TND communities is difficult to measure but is apparent in more ways than one. The goal is to create roads and neighborhoods that have a human scale and functionality. TND communities might be described as healthy for two principal reasons. First, these places tend to have much greater levels of neighborhood social interaction, with residents experiencing a sense of belonging to a community. In effect, they are more "livable". This community vitality promotes the development and serves to attract new residents and businesses, as well as to further promote the TND pattern for future developments. Second, the individual residents of a TND may see health benefits from walking or bicycling within the community in ways that aren't seen in conventional suburbs due to the safety concerns of walking or cycling where appropriate facilities are not present, or where greater travel distances and high speed traffic discourage anything but automobile travel. Right of way landscaping, civic spaces, street lighting, clearly identified crosswalks, and coordinated streetscape elements also attribute to the quality of life in a TND.

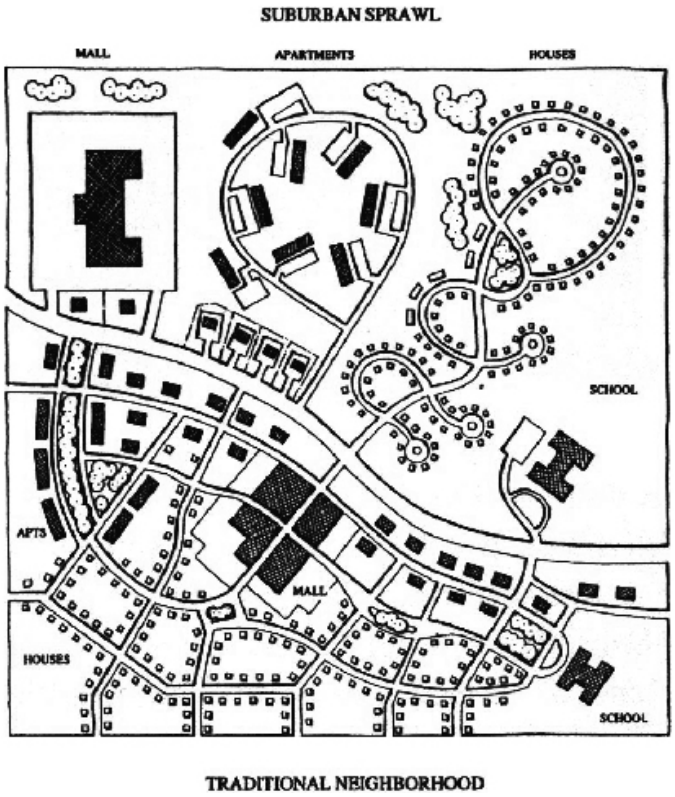
Sources:

Smart Growth and Conventional Suburban Development: Which Costs More?
Traditional Neighborhood Development: Will the Traffic Work?
Emergency Response and Street Design
Defining and Measuring the Sustainable Transportation Network
VDOT TIA Guidelines
UNC TND Trip Generation Study

Traffic Impacts: TND vs. Conventional Development

The major transportation goal for the two locations selected for the Martinsville UDAs should be to promote scaled, interconnected streets that supplement a coordinated urban street network within the City. This will require both new transportation improvements with the UDAs as well as coordinated traffic engineering strategies to reduce traffic volumes. This section addresses the latter: *traffic reduction*. The overall aim is to reinforce a transportation network for the designated UDAs – incorporating both on-site and off-site improvements – in order to (1) reduce pressure on the existing City street system in and around the Uptown planning area, (2) reduce gross traffic volumes on the City's external street network, and (3) expand both vehicular and pedestrian options for the distribution of Uptown.

This study reveals that traffic patterns influenced by well planned, pedestrian-friendly mixed-use projects in the Uptown area could significantly reduce external traffic impacts on local when compared to traffic created by the "destination" patterns of land development in Martinsville over the past generation. Destination land use patterns are represented by residential subdivisions and isolated commercial and employment centers that have no means of interconnectivity other than via the City's arterials and collector roads. While Uptown Martinsville's historic grid pattern functions well, recent decades have evidenced more scattered forms of land development and strip commercial uses that do not interconnect in an effective and efficient manner.



TND/UDA Development w/Arterial Frontage

Neighborhood street interconnectivity
Commercial access from internal streets
Maximize internal capture and bypass movements
Maximize pedestrian and bike opportunities
Promote neighborhood schools and facilities
System attracts diverted trips

In addition to TND vehicular trip reductions are the potential long-range benefits that will result from *(1) development of compatible alignments for new streets and parking facilities within the designated UDAs, (2) selected ROW improvements to existing City streets, and (3) continued pursuit of more attractive, future alternative modes of transportation (pedestrian, bike, commuter parking, bus service, etc.)*

Employing TND traffic planning principles is crucial to the long-term growth and sustainability of the designated Uptown UDAs. It is clear that (a) limited rights of way exist for major improvements to existing City streets, and (b) available opportunities need to be preserved to secure rights of way and create new streets and pedestrian facilities within the UDAs. In response, it is important that the UDA land use and transportation planning efforts be focused and coordinated to upgrade the character, quality, quantity, and capacity of Uptown vehicular and pedestrian patterns.

TND Trip Analysis Objectives

The preceding sections of "Transportation Benefits" chapter have examined the qualitative transportation benefits and opportunities inuring to the implementation of TND forms of land use in the City, in general, and the UDAs, in particular. While it is not the purpose of this section to present a detailed quantitative traffic impact assessment, it is helpful for comparative purposes to evaluate the daily and peak traffic volumes that will be generated by future demographic and employment demands in Martinsville.

The key traffic planning question to be addressed is: *"Will TND development in the Uptown result in greater or diminished traffic demands and corresponding impacts on the City's existing road network when compared to the "status quo" forms of development in the City over the past several generations?"*

TND Traffic Demand Projections

This section employs the *"simple method"* for comparative traffic projections, revealing only a comparative, macro-level traffic assessment based on the two options for future land use patterns. While this method is an imperfect technique for use in project-specific TIAs (such as VDOT 527 studies), it works well at a macro-level to assess comparative impacts of varying forms of land development.

The technique compares and contrasts traffic volumes that would be generated by:

(1) conventional approaches for land development of future UDA-defined land uses, assuming that were spread throughout the City that would absorb predicted levels of UDA population and employment growth, and

(2) the same amount of UDA-defined growth absorbed by the TND form of development.

The focus of this analysis is to assess the impact on the existing City transportation system, recognizing that it has little room for substantial enhancement and expansion. Thus, the comparative analysis examines only the impacts of future UDA-defined residential and commercial land uses. It does not generate estimates of existing and background traffic created by non-UDA defined uses (manufacturing, warehousing, government, and education).

While there are many factors that can influence the future traffic volumes, it is noteworthy that the "*simple method*" provides a reliable technique to analyze the potential to realize reductions in TND transportation impacts attributable to future growth on its existing transportation system. Since TNDs, by virtue of their compact density, distribute internally generated traffic within a more narrowly defined geographical region, the localized traffic benefit is realized through the distributed patterns for this traffic via interconnected street patterns. This also reduces the concentration of net traffic demands on the external street system at single points of intersection. In contrast, the model reveals that the same development density scattered throughout a much larger geographical area does not benefit from reductions resulting from shared land use patterns.

As previously indicated in this report, the City's population and employment projections have been translated into land use demands for the 2010-2020 and 2010-2030 growth horizons. Regardless of whether these demands are satisfied by the "status quo" land use patterns of prior decades or by compact TND forms of mixed-use within the designated UDAs, the demand-based land use projections represent the independent variable in calculating future increases in traffic volumes. The accompanying chart summarizes the predicted population distribution by housing type as well as the projected employment demands in terms of spatial requirements for new or redeveloped facilities.

TND Traffic Modeling Limitations

There is no consensus amongst state transportation agencies and private sector traffic consultants on the techniques and factors that are used to calculate the traffic a TND project contributes to the surrounding local and regional road net. This is, and will continue to be, the subject of debate between traffic planning experts that extends beyond the scope of this study. In spite of the research, real world experience has shown that this is not an exact science. However, for the purposes of demonstrating the transportation benefits of TND projects, the qualitative and quantitative factors and other assumptions employed by the *"simple method"* allow for an adequate *"big picture"* comparison between (1) compact, mixed-use TND forms of development *and* (2) suburban-styled development patterns characterized by conventional subdivisions and destination uses.

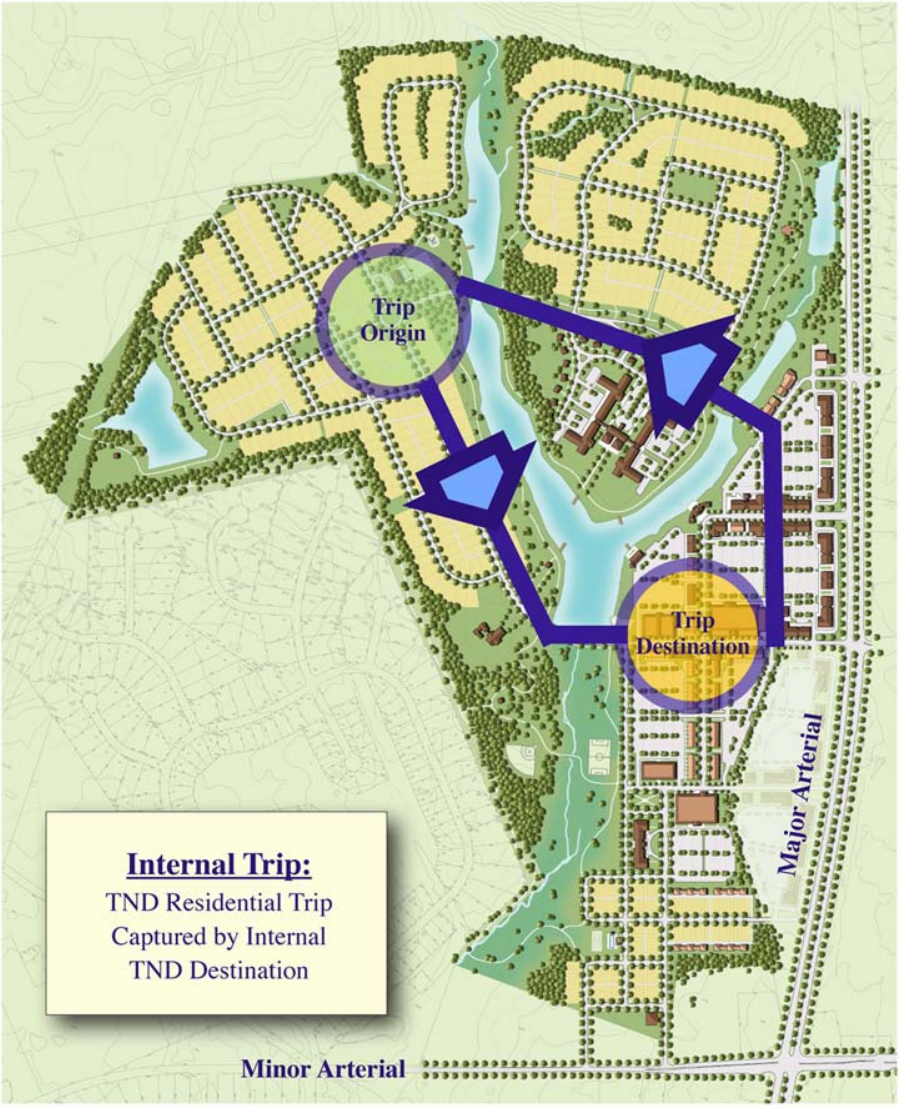
The primary resource supporting the comparative trip estimates in the accompanying *"simple method"* model is derived from the most recent research: "National Cooperative Highway Research Program, Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Development" published by the Transportation Research Board in 2011. The objective of this extensive $250,000 study was to produce a methodology for enhancing internal trip capture estimates that included (1) a classification system of mixed-use developments that identifies the site characteristics, features, and context that are likely to influence internally captured trips and (2) a data-collection framework for quantifying the magnitude of internal travel to and around mixed-use developments to determine the appropriate reduction rates. It determined that the ITE methodology employed by many DOTs throughout the United States have consistently overestimated traffic while it rarely underestimated traffic.

The TRB's research team proceeded to collect and conduct new studies of TNDs in an effort to (1) rethink the efficacy of continued use of certain institutional "rules of thumb" for capture rates, and (2) present an improved methodology for traffic assessments of this form of development. Given that this study presents the most up-to-date, state of the art approach for developing TIA models, it is highly commended to those professionals in the traffic planning field. While the report recognizes the contribution of the methodologies presented in the ITE Trip Generation Handbook, it cites that the framework for mixed-use development traffic analysis is based on a limited set of data and advises professions in both the public and private sector to *"collect additional data if possible."*

Internal Trip Capture for TNDs

The dominant variables in such an analysis are (a) internal trip capture, (b) pass-by trip reductions, and, in special cases, (c) trip diversions.

"Internal trip" capture is one of the unique transportation characteristics of TND projects that distinguish them from conventional (or "status quo") forms of development. Within TNDs, there is a greater opportunity for trips to have both origins and destinations within the project itself. These trips, which are known as "internal" trips, do not typically impact the external street network. As a result, the portion of travel demands that are internal to the City's designated UDAs (as well as the Uptown planning area) results in an external trip generation estimate that is substantially lower than if the on-site land uses are located as stand-alone sites, scattered throughout the City. Thus, the "internal capture rate" provides an essential tool for calculating the TND benefits that are realized from combining pedestrian, bicycle, and other forms of travel mode with residential, employment, shopping, recreation, and educational opportunities that are within immediate proximity to each other.

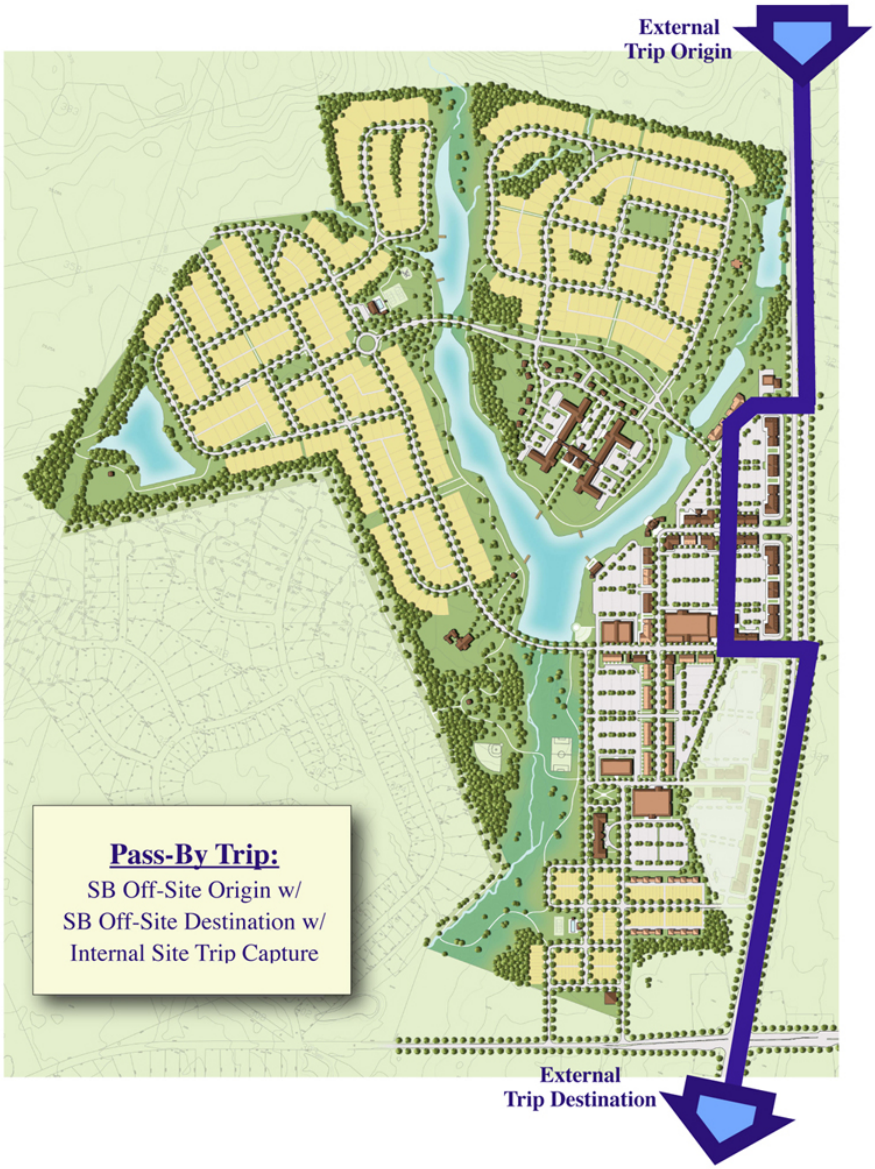


The accurate estimation of internal trip capture for TNDs is an essential element of the transportation planning process. Overestimating internal trip capture could result in the traffic infrastructure around the site being inadequate for the real levels of traffic demand. This would result in breakdowns in level of service and costly future upgrades and right of way acquisition. Underestimating internal trip capture, on the other hand, could lead to excess street improvements and capacity, with the City or developer paying more than necessary to mitigate the traffic impacts of the proposed project.

At present, Martinsville has a relatively healthy, well functioning physical network of grid streets in and around the Uptown planning area. This is coupled with excess capacity within its development infrastructure. However, it is important to consider the long-term impacts of growth, inasmuch as the City will be an attractive location for residential and business opportunities in the years to come.

Pass-By Trip Capture for TNDs

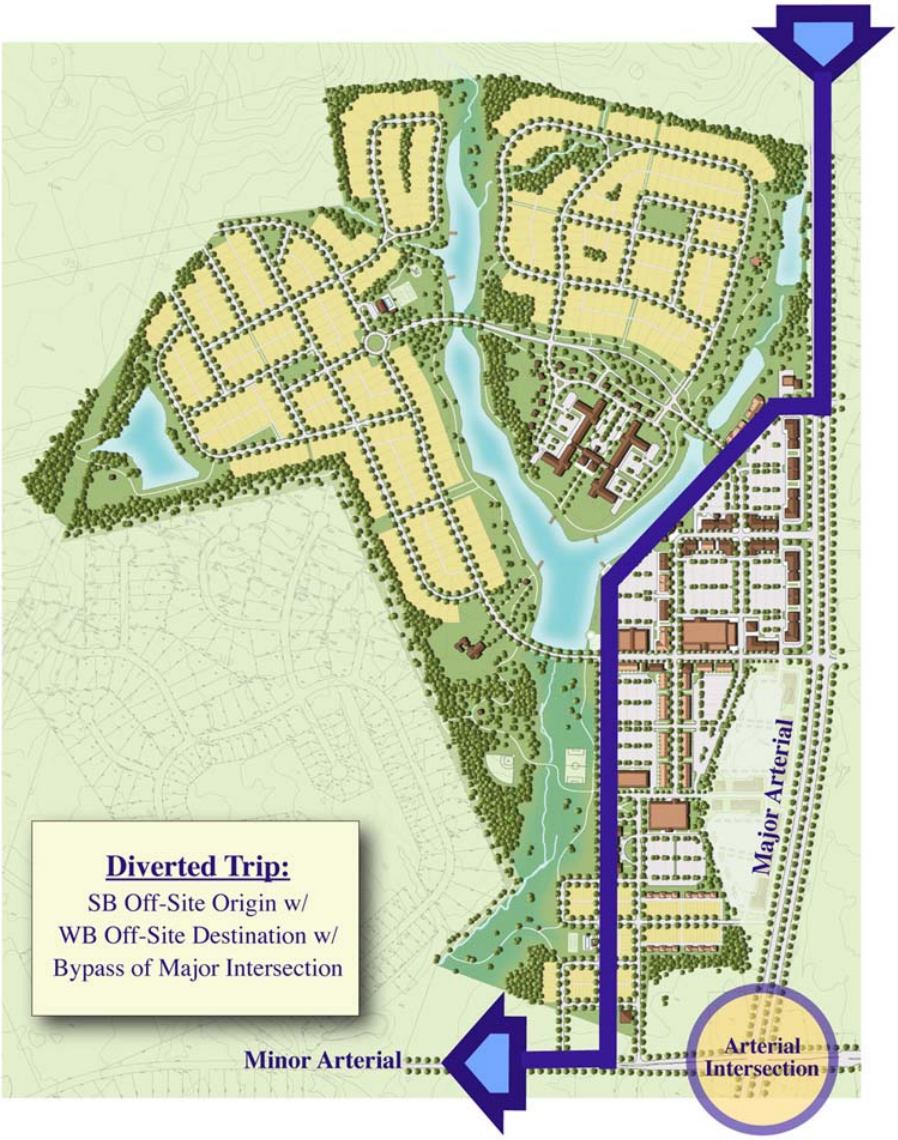
"Pass-by" trips are vehicular trips made as intermediate stops on the way from an origin to a primary trip destination. Pass-by trip reductions consider trips, typically non-residential, drawn from existing traffic on an adjacent street, recognizing that trips drawn to a site would otherwise already traverse the adjacent street regardless of existence of the site. Pass-by trip reductions allow a reduction in the forecast of trips otherwise added to the adjacent street from the proposed development. For a mixed-use project, pass-by trip rates for retail land uses translate into a modest reduction in retail trip generation for a given use, allowing for total retail trips to be discounted. The traditional method of pass-by trip estimation is regression modeling based on methods described in the Institute of Transportation Engineers (ITE) Trip Generation manual. However, pass-by trips for TND and mixed-use developments are typically larger, due to the overall mix and quality of non-residential development, than those experienced in conventional, scattered development.



Trip Diversion for TNDs

"Trip diversion" represents a generally unrecognized benefit of enhanced TND connectivity under certain conditions. This benefit is typically realized with TND projects located adjacent to or in close proximity to an arterial or major urban collector intersection where new internal street alignments could capture, transfer and divert TND-generated traffic that would otherwise be distributed through the existing intersection.

This capture component is not typically included in standard "internal capture" ratios. However, it demonstrates the added traffic benefit of well-located projects that provide an enhanced level of interconnectivity benefiting locations contiguous to major intersections. Thus, employing a "diversion rate" is location-sensitive and not appropriate in areas where the project's location and interior street system are not capable of providing "bypass" relief to the minor artery at the intersection under observation.



TRB Study Recommendations

The 2011 TRB Report 684 documents internal trip capture rates that were analyzed at a number of fully developed, TND-styled projects throughout the country. AM and PM peak capture as well as average daily capture were included in the studies. The range in internal trip capture rates was 38% to 41%. Daily pass-by rates ranged from 14% to 40%, with an average of 28%. The report also documents daily by-pass rates observed in six TND communities. The range was 14% to 40% with an average of 28%.

A noteworthy study is from the Brandermill planned development, an established mixed-use community in Chesterfield County. It employs a seldom used (and time consuming) survey technique to evaluate transportation benefits to quantify the characteristics of home-based trips within a community. This requires a commitment to interviewing community residents about their travel habits. Brandermill presents an exceptional case study that reveals the benefits of a bona fide TND project that fulfills the UDA transportation and land use goals. It has a relatively high ratio of residents employed within the Brandermill study area (46%).

The daily average for home-based trips with destinations within Brandermill averaged 35% while home-based trip ends with origins within Brandermill averaged 39%. In other words, approximately 4 out of 10 trips ends to Brandermill residences began within the Brandermill community. When retail shopping center trips within Brandermill were evaluated, it revealed that approximately two-thirds of the retail destination trips originated with the Brandermill community during the midday and evening peak hours. Internal trip capture was determined to be 51% on a daily basis, with 45% and 55% internal capture during the AM and PM peak periods.

The factors employed for this study have been applied in a qualitative fashion, with due respect to techniques and protocols commonly accepted in Virginia. They are reasonably debatable, but appropriate for comparative planning purposes. For the Uptown UDA model, the assumed net internal capture rate is 30%. The matrix employed a 5% rate (residential) and 30% (retail) attributable to a more loosely defined "diversion and pass-by". For the "Status Quo" model, a 6% internal capture rate for residential dwellings and a 25% retail pass-by rate were assumed. Given the UDA land use configuration in the City's Uptown planning area, substantial TND diversion trips may not be realized.

Based on statistically valid field research, TND proponents can and should make a valid argument for somewhat higher rates, given that current VDOT and ITE factors would not necessarily agree. However, it is recommended that 527 Pre-Scope of Work agreements for specific TND projects require that any approved reduction to current VDOT permissible rates be fully documented by a professional traffic consultant.

Comparative Analysis Process for Martinsville Uptown UDA

The *"simple method"* spreadsheets provide a macro-level evaluation technique that demonstrates the potential reduction in traffic impacts of TND/UDA development forms in comparison to status-quo, highway-oriented "destination" location patterns in the subject locality. Four major assumptions underlie and qualify the traffic projections contained herein:

1. The analysis examines only additional traffic for UDA-defined uses that will be generated by new development during the 2010-2020 and 2010-2030 projection periods. Existing and projected background traffic is <u>not included</u> in the generation tables.

2. The density of development is applied to <u>only</u> the principal land uses defined by the UDA legislation: retail, commercial office and services, single family residential, townhouses, and multifamily residences. Manufacturing establishments, warehousing, government facilities and education uses are not included in the comparisons.

3. The TND traffic generation model assumes a representative and sustainable mix of land uses within the designated UDA area for each of the projection periods. In other words, it represents an "ideal case" for the UDA with similar internal capture benefits that have been documented in successful TND projects.

4. The "Status Quo" traffic estimates assume that designation-oriented land uses (shopping centers, schools, employment establishments) and scattered residential development on large lots and dispersed subdivisions will be the typical development pattern in future years. In other words, it presents a "worst case" from the standpoint of traffic impacts on the existing City road network.

While not to be mistaken for a formal impact assessment, the steps outlined below lead to a hypothetical view of the relative traffic reduction benefits from mixed-use, interconnected projects that apply the UDA planning process.

1. *Determine UDA "developable acreage" and UDA land use yields for the City prepared for this study based on VEC projections. The accompanying models employ City's growth projections for 2010-2020 and 2010-2030. Projected residential demands are compared for both TND and "Status Quo" housing (single family detached, townhouses, and multifamily residences.)*

2. *Determine appropriate Institute of Transportation Engineers (ITE) land use code and trip generation rates for each UDA land use category.*

3. *Prepare traffic generation estimates employing ADT and PM PHV factors for both the 2010-2020 and 2010-2030 projection periods. As indicated in the accompanying tables, the City population is projected to increase by almost 290 residents between 2010 and 2020 and an additional 590 residents between 2020 and 2030.*

4. *Calculate gross traffic generation for each use and combined mix of uses. For the traffic models, it is assumed that the future residential population growth increments cited in (2) above will be distributed per UDA Land Use Scenario #3 among the three UDA housing types: single family detached (33% population capture), townhouses (33% population capture), and multifamily residences (33% population capture). Similarly, UDA commercial and office spatial allocations have been pro-rated based on predicted demand levels. The Status Quo model assumes 60% single family detached and 20% townhouses and 20% multifamily units.*

5. *The gross traffic generation establishes the traffic impact of the conventional, "status quo" form of land use. This is based on the assumption that future City growth will be distributed on a similar widespread basis at densities similar to those of the past generation. No internal capture factor is introduced for the conventional community since a net factor is employed for the TND internal capture.*

6. *Estimate a blended internal capture rate and diversion rate, and calculate the capture volumes for the individual and combined land use mix for the locale's TND/UDA land use model. Keep in mind that the "diversion rate" is an additional "benefit factor" that is not typically recognized by VDOT but is often helpful in evaluating the potential benefits of a "best case" TND.*

7. *Introduce location-specific approximations for a blended external pass-by rate and diversion rate; calculate the pass-by volumes absorbed by the regional background traffic.*

8. *Apply the calculated capture and pass-by volumes, with the net generation figures providing an approximate estimate of the traffic impacts of the TND land use model on the surrounding highway network. Do the same for the Conventional model but eliminate internal capture and diversion volumes.*

9. *Calculate the TND traffic reduction ratio = (Status Quo Volume - TND Volume) / TND Volume.*

10. *Determine level of background Average Daily Trips (ADT) and Peak Hour Volume (PHV) traffic on adjacent arterial or collector networks.*

11. *Prepare a qualitative assessment of TND vs. the Conventional (Status Quo) scenarios on the contiguous network, including estimate of diverted regional background traffic potentially absorbed via parallel access system.*

Technical Analysis Summary

The *"simple method"* was used to evaluate both the 2010-2020 and 2010-2030 projection periods. (See Tables 1-6 at the end of this section.) A net internal capture rate of 30% was employed for both residential and non-residential uses in the TND option, and blended pass-by/diversion rates of 25% for retail and 5% for residential uses were used.

During the 2010-2020 timeframe, new traffic generation based on conventional traffic patterns was predicted to add approximately 3165 vehicles per day. Of this amount, 479 VPD represents pass-by trips and 64 VPD internal capture trips, creating a net external trip count of 2621 VPD added to the local street system.

When applying the TND model to the same timeframe, the external impact was an estimated 1713 VPD, or approximately 65% of the predicted conventional levels. Peak hour generation for the TND model was 162 vehicles per hour, compared to 250 VPH for the conventional, resulting in a reduction of 35% when compared to the predicted TND levels. As noted in the tables, similar percentage reduction results are forecast for the 2010-2030 projection period.

In conclusion, the TND form of land use in the designated Martinsville Uptown UDA coupled with local street improvements can be expected to produce measurable benefits for the City's transportation system.

The City of Martinsville

Demographic and Population Growth Projections

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"Scenario 3" TND Land Use vs. "Status Quo" Land Use

	% Distribution	UDA Projection Period		
		2010-2020	2020-2030	2010-2030
Population Growth Increment *		288	587	875
UDA Growth Distribution Scenario #3 *(TND land use pattern)*				
Residential Dwelling Demand		*du*	*du*	*du*
Single Family Detached	*33%*	33	75	108
Townhouses/Attached	*33%*	59	145	204
Multifamily Residences	*33%*	68	185	253
Total Residential Unit Demand	*100%*	160	405	565
"Status Quo" Growth Distribution Scenario *(conventional land use patterns)*				
Residential Dwelling Demand		*du*	*du*	*du*
Single Family Detached	*60%*	60	121	181
Townhouse/Attached	*20%*	36	73	109
Multifamily Residences	*20%*	41	84	125
Total Residential Unit Demand	*100%*	137	278	415
Retail and Employment Scenario *(same for both UDA and Status Quo Scenarios)*				
Non-Residential Space Demand		*sfgfa*	*sfgfa*	*sfgfa*
UDA Commercial		63,557	164,473	228,030
Non-UDA Commercial		24,515	77,399	101,914
Government/Education		8,087	22,983	31,070

Note: ***du:*** *residential dwellings units;* ***sfgfa:*** *square feet gross commercial floor area;* * *Projection source: Cox Company*

The City of Martinsville UDA Transportation Study

TND Land Use: Comparative Traffic Impact Model

Population and Employment Growth Levels: 2010 - 2020 (10-year growth horizon)

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	UDA Land Use Classifications					
Traffic Assigments and Distributions	**Single Family**	**Townhouses**	**Multifamily**	**Retail**	**Office**	**Totals**
UDA Population Distribution	**33%**	**33%**	**33%**			
Planned UDA Yield *(dwelling units or FAR)*	**33** *du*	**59** *du*	**68** *du*	**43,600** *du*	**20,000** *sfgfa*	
ITE Land Use Code	210	230	220	820	710	
ITE Generation Rate (ADT)	9.57 *vtpd*	5.86 *vtpd*	6.72 *vtpd*	0.04294 *vtpd*	0.01101 *vtpd*	*vtpd*
Gross Traffic Generation (ADT)	316 *adt*	346 *adt*	457 *adt*	1872 *adt*	220 *adt*	3,211 *adt*
ITE Generation Rate (PM PHV)	1.01 *vtph*	0.52 *vtph*	0.62 *vtph*	0.00375 *vtph*	0.00149 *vtph*	*vtph*
Gross Traffic Generation (PM PHV)	33	31	42	164	30	299
TND Reduction: TND Enhanced Internal Capture Rate	30%	30%	30%	30%	30%	
TND Reduction: TND Enhanced Internal Capture Volume (ADT)	95 *adt*	104 *adt*	137 *adt*	562 *adt*	66 *adt*	963 *adt*
TND Internal Capture Volume (PM PHV)	10 *phv*	9 *phv*	13 *phv*	49 *phv*	9 *phv*	90 *phv*
TND Reduction: Diversion and Passby Capture Rate *(optimal)*	5%	5%	5%	25%	5%	
TND Reduction: Diversion and Passby Capture Volume (ADT)	16 *adt*	17 *adt*	23 *adt*	468 *adt*	11 *adt*	535 *adt*
TND Reduction: Diversion and Passby Capture Volume (PM PHV)	2 *phv*	2 *phv*	2 *phv*	41 *phv*	1 *phv*	48 *phv*
Sub-total: TND Volume Reduction Adjustment (ADT)	111 *adt*	121 *adt*	160 *adt*	1030 *adt*	77 *adt*	1,498 *adt*
Sub-total: TND Volume Reduction Adjustment (PM PHV)	12 *phv*	11 *phv*	15 *phv*	90 *phv*	10 *phv*	138 *phv*
SUMMARY: TND TRANSPORTATION MODEL IMPACTS						
Total: Net TND Traffic Volume (ADT)	205 *adt*	225 *adt*	297 *adt*	842 *adt*	143 *adt*	**1,713** *adt*
Total: Net TND Traffic Volume (PM PHV)	22 *phv*	20 *phv*	27 *phv*	74 *phv*	19 *phv*	**162** *phv*

The City of Martinsville UDA Transportation Study

"Status Quo" Land Use: Comparative Traffic Impact Model

Population and Employment Growth Levels: 2010 - 2020 (10-year growth horizon)

Martinsville
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	Conventional Land Use Classifications					
Traffic Assigments and Distributions	**Single Family**	**Townhouses**	**Multifamily**	**Retail**	**Office**	**Totals**
Population Distribution per "Status Quo" Land Use	**60%**	**20%**	**20%**			
Projected Development Yield *(dwelling units or FAR)*	**60** *du*	**38** *du*	**41** *du*	**43,600** *du*	**20,000** *sfgfa*	
ITE Land Use Code	210	230	220	820	710	
ITE Generation Rate (ADT)	9.57 *vtpd*	5.86 *vtpd*	6.72 *vtpd*	0.04294 *vtpd*	0.01101 *vtpd*	*vtpd*
Gross Traffic Generation (ADT)	574 *adt*	223 *adt*	276 *adt*	1872 *adt*	220 *adt*	3,165 *adt*
ITE Generation Rate (PM PHV)	1.01 *vtph*	0.52 *vtph*	0.62 *vtph*	0.00375 *vtph*	0.00149 *vtph*	*vtph*
Gross Traffic Generation (PM PHV)	60.6	19.76	25.42	163.5	29.8	299
Conventional Reduction: Internal Capture Rate	6%	6%	6%	0%	0%	
Conventional Reduction: Internal Capture Volume (ADT)	34 *adt*	13 *adt*	17 *adt*	0 *adt*	0 *adt*	64 *adt*
Conventional Internal Capture Volume (PM PHV)	4 *phv*	1 *phv*	2 *phv*	- *phv*	- *phv*	6 *phv*
Conventional Reduction: Passby Capture Rate *(optimal)*	0%	0%	0%	25%	5%	
Conventional Reduction: Passby Capture Volume (ADT)	0 *adt*	0 *adt*	0 *adt*	468 *adt*	11 *adt*	479 *adt*
Conventional Reduction: Passby Capture Volume (PM PHV)	0 *phv*	0 *phv*	0 *phv*	41 *phv*	1 *phv*	42 *phv*
Sub-total: Volume Reduction Adjustment (ADT)	34 *adt*	13 *adt*	17 *adt*	468 *adt*	11 *adt*	543 *adt*
Sub-total: Volume Reduction Adjustment (PM PHV)	4 *phv*	1 *phv*	2 *phv*	41 *phv*	1 *phv*	49 *phv*
SUMMARY: CONVENTIONAL LAND USE MODEL TRANSPORTATION MODEL IMPACTS						
Total: Net Traffic Volume (ADT)	540 *adt*	209 *adt*	259 *adt*	1404 *adt*	209 *adt*	**2,621** *adt*
Total: Net Traffic Volume (PM PHV)	57 *phv*	19 *phv*	24 *phv*	123 *phv*	28 *phv*	**250** *phv*

The City of Martinsville UDA Transportation Study

Comparison of TND and "Status Quo" Land Use Models

Population and Employment Growth Levels: 2010 - 2020 (10-year growth horizon)

Comparison of TND and "Status Quo" Trip Generation by Projected Land Use

Comparative Summary	Single Family	Townhouses	Multifamily	Retail	Office	Totals
TND TRANSPORTATION MODEL IMPACTS						
Total: Net TND Traffic Volume (ADT)	205 *adt*	225 *adt*	297 *adt*	842 *adt*	143 *adt*	**1,713** *adt*
Total: Net TND Traffic Volume (PM PHV)	22 *phv*	20 *phv*	27 *phv*	74 *phv*	19 *phv*	**162** *phv*
"STATUS QUO" LAND USE MODEL TRANSPORTATION MODEL IMPACTS						
Total: Net Traffic Volume (ADT)	540 *adt*	209 *adt*	259 *adt*	1404 *adt*	209 *adt*	**2,621** *adt*
Total: Net Traffic Volume (PM PHV)	57 *phv*	19 *phv*	24 *phv*	123 *phv*	28 *phv*	**250** *phv*

COMPARATIVE TRAFFIC IMPACTS: TND LAND USE VS. "STATUS QUO" COUNTY LAND USE PATTERNS

Total Estimated ADT Trip Reduction: TND Land Use Model vs. Status Quo	**909** *adt*
Total Estimated PHV Trip Reduction: TND Land Use Model vs. Status Quo	**88** *phv*
Comparative Reduction Ratio #1: % = (TND Land Use Model ADT) / (Status Quo Model ADT)	**65.3%**
Comparative Reduction Ratio #2: % ADT Reduction = (TND Land Use Model ADT) - (Status Quo Model ADT) / (Status Quo Model ADT)	**34.7%**
Comparative Reduction Ratio #2: % ADT Reduction = (TND Land Use Model ADT) - (Status Quo Model ADT) / (TND Model ADT)	**53.1%**

The City of Martinsville UDA Transportation Study

TND Land Use: Comparative Traffic Impact Model

Population and Employment Growth Levels: 2010 - 2030 (20-year growth horizon)

Martinsville
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	UDA Land Use Classifications					
Traffic Assigments and Distributions	**Single Family**	**Townhouses**	**Multifamily**	**Retail**	**Office**	**Totals**
UDA Population Distribution	**33%**	**33%**	**33%**			
Planned UDA Yield *(dwelling units or FAR)*	**108** *du*	**204** *du*	**253** *du*	**160,000** *du*	**70,000** *sfgfa*	
ITE Land Use Code	210	230	220	820	710	
ITE Generation Rate (ADT)	9.57 *vtpd*	5.86 *vtpd*	6.72 *vtpd*	0.04294 *vtpd*	0.01101 *vtpd*	*vtpd*
Gross Traffic Generation (ADT)	1034 *adt*	1195 *adt*	1700 *adt*	6870 *adt*	771 *adt*	11,570 *adt*
ITE Generation Rate (PM PHV)	1.01 *vtph*	0.52 *vtph*	0.62 *vtph*	0.00375 *vtph*	0.00149 *vtph*	*vtph*
Gross Traffic Generation (PM PHV)	109	106	157	600	104	1,076
TND Reduction: TND Enhanced Internal Capture Rate	30%	30%	30%	30%	30%	
TND Reduction: TND Enhanced Internal Capture Volume (ADT)	310 *adt*	359 *adt*	510 *adt*	2061 *adt*	231 *adt*	3471 *adt*
TND Internal Capture Volume (PM PHV)	33 *phv*	32 *phv*	47 *phv*	180 *phv*	31 *phv*	323 *phv*
TND Reduction: Diversion and Passby Capture Rate *(optimal)*	5%	5%	5%	25%	5%	
TND Reduction: Diversion and Passby Capture Volume (ADT)	52 *adt*	60 *adt*	85 *adt*	1718 *adt*	39 *adt*	1,953 *adt*
TND Reduction: Diversion and Passby Capture Volume (PM PHV)	5 *phv*	5 *phv*	8 *phv*	150 *phv*	5 *phv*	174 *phv*
Sub-total: TND Volume Reduction Adjustment (ADT)	362 *adt*	418 *adt*	595 *adt*	3779 *adt*	270 *adt*	5,424 *adt*
Sub-total: TND Volume Reduction Adjustment (PM PHV)	38 *phv*	37 *phv*	55 *phv*	330 *phv*	37 *phv*	497 *phv*
SUMMARY: TND TRANSPORTATION MODEL IMPACTS						
Total: Net TND Traffic Volume (ADT)	672 *adt*	777 *adt*	1105 *adt*	3092 *adt*	501 *adt*	**6,147** *adt*
Total: Net TND Traffic Volume (PM PHV)	71 *phv*	69 *phv*	102 *phv*	270 *phv*	68 *phv*	**580** *phv*

The City of Martinsville UDA Transportation Study

"Status Quo" Land Use: Comparative Traffic Impact Model

Population and Employment Growth Levels: 2010 - 2030 (20-year growth horizon)

Martinsville
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	Conventional Land Use Classifications					
Traffic Assigments and Distributions	**Single Family**	**Townhouses**	**Multifamily**	**Retail**	**Office**	**Totals**
Population Distribution per "Status Quo" Land Use	**60%**	**20%**	**20%**			
Projected Development Yield *(dwelling units or FAR)*	**181** *du*	**109** *du*	**125** *du*	**160,000** *du*	**70,000** *sfgfa*	
ITE Land Use Code	210	230	220	820	710	
ITE Generation Rate (ADT)	9.57 *vtpd*	5.86 *vtpd*	6.72 *vtpd*	0.04294 *vtpd*	0.01101 *vtpd*	*vtpd*
Gross Traffic Generation (ADT)	1732 *adt*	639 *adt*	840 *adt*	6870 *adt*	771 *adt*	10,852 *adt*
ITE Generation Rate (PM PHV)	1.01 *vtph*	0.52 *vtph*	0.62 *vtph*	0.00375 *vtph*	0.00149 *vtph*	*vtph*
Gross Traffic Generation (PM PHV)	182.81	56.68	77.5	600	104.3	1,021
Conventional Reduction: Internal Capture Rate	6%	6%	6%	0%	0%	
Conventional Reduction: Internal Capture Volume (ADT)	104 *adt*	38 *adt*	50 *adt*	0 *adt*	0 *adt*	193 *adt*
Conventional Internal Capture Volume (PM PHV)	11 *phv*	3 *phv*	5 *phv*	- *phv*	- *phv*	19 *phv*
Conventional Reduction: Passby Capture Rate *(optimal)*	0%	0%	0%	25%	5%	
Conventional Reduction: Passby Capture Volume (ADT)	0 *adt*	0 *adt*	0 *adt*	1718 *adt*	39 *adt*	1,756 *adt*
Conventional Reduction: Passby Capture Volume (PM PHV)	0 *phv*	0 *phv*	0 *phv*	150 *phv*	5 *phv*	155 *phv*
Sub-total: Volume Reduction Adjustment (ADT)	104 *adt*	38 *adt*	50 *adt*	1718 *adt*	39 *adt*	1,949 *adt*
Sub-total: Volume Reduction Adjustment (PM PHV)	11 *phv*	3 *phv*	5 *phv*	150 *phv*	5 *phv*	174 *phv*
SUMMARY: CONVENTIONAL LAND USE MODEL TRANSPORTATION MODEL IMPACTS						
Total: Net Traffic Volume (ADT)	1628 *adt*	600 *adt*	790 *adt*	5153 *adt*	732 *adt*	**8,903** *adt*
Total: Net Traffic Volume (PM PHV)	172 *phv*	53 *phv*	73 *phv*	450 *phv*	99 *phv*	**847** *phv*

The City of Martinsville UDA Transportation Study

Comparison of TND and "Status Quo" Land Use Models

Population and Employment Growth Levels: 2010 - 2030 (20-year growth horizon)

Comparison of TND and "Status Quo" Trip Generation by Projected Land Use

Comparative Summary	Single Family	Townhouses	Multifamily	Retail	Office	Totals
TND TRANSPORTATION MODEL IMPACTS						
Total: Net TND Traffic Volume (ADT)	672 *adt*	777 *adt*	1105 *adt*	3092 *adt*	501 *adt*	**6,147** *adt*
Total: Net TND Traffic Volume (PM PHV)	71 *phv*	69 *phv*	102 *phv*	270 *phv*	68 *phv*	**580** *phv*
"STATUS QUO" LAND USE MODEL TRANSPORTATION MODEL IMPACTS						
Total: Net Traffic Volume (ADT)	1628 *adt*	600 *adt*	790 *adt*	5153 *adt*	732 *adt*	**8,903** *adt*
Total: Net Traffic Volume (PM PHV)	172 *phv*	53 *phv*	73 *phv*	450 *phv*	99 *phv*	**847** *phv*
COMPARATIVE TRAFFIC IMPACTS: TND LAND USE VS. "STATUS QUO" COUNTY LAND USE PATTERNS						
Total Estimated ADT Trip Reduction: TND Land Use Model vs. Status Quo						**2,757** *adt*
Total Estimated PHV Trip Reduction: TND Land Use Model vs. Status Quo						**267** *phv*
Comparative Reduction Ratio #1: % = (TND Land Use Model ADT) / (Status Quo Model ADT)						**69.0%**
Comparative Reduction Ratio #2: % ADT Reduction = (TND Land Use Model ADT) - (Status Quo Model ADT) / (Status Quo Model ADT)						**31.0%**
Comparative Reduction Ratio #2: % ADT Reduction = (TND Land Use Model ADT) - (Status Quo Model ADT) / (TND Model ADT)						**44.8%**

TND Traffic Impact Studies

Traffic impact studies are fundamental to any land development activity that impacts the City's street and highway system. In conjunction with rezoning applications for TND projects, the City and property owner shall determine whether or not the project shall require a traffic impact statement to be prepared consistent with VDOT 527 regulations. Upon input from VDOT, if a 527 traffic impact analysis is required, the landowner shall prepare and submit a Pre-Scope of Work Meeting Form to the City on or before the date of formal submission of the zoning district amendment application. The Pre-Scope form shall be processed, reviewed by and between the City, VDOT, and the landowner in accord with adopted regulations and procedures.

In rezoning cases where the City believes that an independent TIA should be prepared but that the 527 regulatory thresholds have not been met, the City shall determine whether or not an independent TIA must be submitted. In those instances, the landowner shall meet with the Planning Director to determine the required scope for a traffic analysis for the TND project The Planning Director shall approve the elements to be addressed in the study scope. The traffic analysis shall be submitted with the zoning amendment application. Minimum requirements may include the following:

(1) Existing traffic counts (AM and PM peak hour) at key intersections.

(2) Trip generation estimates for the planned land uses within the TND.

(3) Trip distribution and assignments to the existing road network of traffic projected for the development at full-buildout.

(4) Estimates of background traffic growth on impacted streets and highways.

(5) Analysis of future conditions, to include HCM level-of-service analysis.

(6) Signal warrants analysis.

(7) Recommended transportation improvements to provide adequate levels of service for the traffic generated by the proposed project.

Transportation Planning and the Official Map

Given the fiscal demands increasingly placed on VDOT and local governments for road improvements, the majority of future new major and minor collector streets will be funded and constructed by the private enterprise. Over the next decade, Virginia transportation funding will be focused on major highway improvements and maintenance. Transportation deficiencies in the future will not be solved by historical approaches. Unless new legislation creates other approaches to implementation, these new streets will obviously have to be constructed in conjunction with private sector land development efforts.

In recognition of this, it should be the City's goal to ensure that a transportation network and strategic plan for road improvements in and around the City's UDAs can be implemented to:

(1) maximize public benefits,
(2) upgrade existing street system inadequacies,
(3) provide for adequate long-term capacity,
(4) minimize, if not eliminate, economic impacts on state and local fiscal structures,
(5) constructed in conjunction with and by new development, and, most importantly
(6) be located where they need to be.

Virginia's statutes for local comprehensive planning and zoning — particularly the VDOT 527 requirements — as well as the VDOT 6-Year Improvement Program are a (slow) step in the right direction. However, a valuable, but virtually neglected, section of the Code of Virginia has been long overlooked by both local and state planners. As a companion to the UDA planning for the Uptown planning area, there is one essential "tool" that will need to be employed to successfully address both the existing and anticipated transportation demands that will impact the UDAs. It is the Official Map *(reference: Section 15.2-2233 of the Code.)*In concert with the City's ongoing comprehensive planning efforts, it will be important to advance its level of traffic and transportation planning to include the preparation of an Official Map. While past City planning efforts have typically focused on generalized transportation objectives, the comprehensive plan, in and of itself, cannot ensure the ultimate establishment and provide the footing for the potential acquisition of rights of way such alignments. However, the City has the opportunity to utilize the Official Map in a way that facilitates the establishment and acquisition of planned street and road alignments.

In Martinsville, as in all Virginia locales, the opportunities for effective government influence in shaping the public transportation elements of privately initiated real estate projects is typically limited to individual rezoning reviews and approvals. It is usually "too late" to influence "big picture" transportation goals by the time a property owner applies for site plan or subdivision plat approvals. Unfortunately, most local comprehensive plans give too little attention to intermediate and long-range transportation alignments and right of way requirements. In cases where alignments are depicted on a comprehensive plan, they typically don't account for the fact that future road alignments will impact multiple parcels and property owners, some with sufficient by-right zoning and some with competing real estate interests. If "smart road" alignments are absent from the comprehensive planning process, new streets in private real estate developments will be dictated by project-specific objectives and will not necessarily be in the public interest. Thus, left to one's own devices, the individual developer will locate roads where they optimally benefit one's specific project while the public sector planner will often overlook the "trees for the forest." From a comprehensive viewpoint, the VDOT 527 process doesn't address this concern, given that it really doesn't come into play until the individual developer has already defined one's project and the strategic approach for getting approvals.

To ensure continuity in the planning and implementation process, alignments for new roads should be contemplated, tested, established, and adopted well in advance of discrete zoning, subdivision, and site plan applications. It is at the end of the local comprehensive plan update process where the real value of the Official Map legislation can be recognized. Without an Official Transportation Map for inter-parcel, interconnecting street systems, the governing body has no real legal mechanism to preserve the preferred alignments in conjunction with the processing of future subdivision plats and site plans. Simply having "desire lines" for new streets loosely drawn on a comprehensive plan is not sufficient to define, preserve, and secure required rights of way for essential roads. One misplaced subdivision lot can effectively block the best laid plans for an otherwise well conceived and integrated access system. The negative results of this are evidenced in the Richmond region and elsewhere in the state.

Under the Code of Virginia, the Official Map is the only formal mechanism by which the alignment for proposed roads and infrastructure can be established in advance by local government, allowing for the proposed rights-of-way to be reserved for future public acquisition or proffered dedication. The Official Map process benefits both the private and the public sector in that landowners can proceed with development plans with the full knowledge and precision of where transportation improvements are to be located. On the other hand, without the ability to pin down inter-parcel access alignments, the locality is virtually impotent in its ability to secure right of way reservation. A coordinated approach results in a "win/win" for both the public and private sector.

To move forward with (1) a transportation plan that complements the Comprehensive Plan, (2) addresses the SSAR and 527-defined traffic planning objectives of VDOT, and (3) the Official Map, Martinsville would need to undertake a relatively straight forward preliminary design and alignment study as a part of the overall planning process. This would take the form of a neighborhood-specific "Transportation Plan and Official Map" study task, and the key tasks should include the following:

1. *Preparation and adoption of thorough Comprehensive Plans that include specific area studies and impact evaluations of existing and proposed future land uses. These plans should document both deficiencies in the existing road network and opportunities for new and expanded transportation systems that complement the communities "vision for the future."*

2. *Compilation of topographic mapping and property boundaries of the area impacted by the candidate alignments for the transportation system as identified by the Comprehensive Plan. Most urban GIS systems, with supplemental control, are sufficient for this purpose.*

3. *Schematic transportation plans and traffic analysis to establish the most feasible alignment options and right of way requirements for the needed streets to successfully implement the UDA Comprehensive Plan's transportation priorities.*

4. *Follow-up to the Comprehensive Plan adoption to address ongoing coordination with affected property owners in selecting the preferred option for horizontal alignments and system requirements for each future street.*

5. *Preparation of preliminary engineering plans and profiles to establish the vertical and horizontal alignment for the preferred options (using GIS mapping if available and accurate.)*

6. *Preparation of metes and bounds for the rights of way for the preferred alignments (again, using existing GIS mapping and supplemental ground survey controls): this represents the Official Map "product" for the rights of way to be reserved.*

7. *Review of the Official Map by the Planning Commission and VDOT.*

8. *Adoption of the Official Map for the transportation system by City Council.*

The Official Map process is neither new nor untried. Many rapidly growing jurisdictions throughout the State have expended tremendous resources to obtain regional GIS mapping. While most GIS systems are underutilized and undermanned, they provide an efficient and cost effective tool for transportation planning. In most GIS systems, land use and topographic mapping is of sufficient detail to be readily (and inexpensively) deployed by engineers and planners to establish relatively accurate transportation alignments in response to anticipated future land uses as adopted by the locale. Often, the expense of GIS systems can be subject to rezoning proffers or, alternately, can be recaptured by zoning and subdivision application and review fees.

Another reason that the Official Map has not been in vogue as a growth management tool is that most rural and suburban locales have not had to worry, for the most part, whether or not adequate land would be available for sub-arterial and inter-neighborhood transportation improvements: Land was ample, density was generally low, sprawl was prototypical (and accepted), and existing highway corridors could be widened to accommodate traffic movement resulting from scattered, strip-styled growth. In effect, the interconnection of suburban (minor arterial and collector) street systems was neither desired nor required to make traffic flow. That day is over. Many of these communities have now run out of ROW expansion space along existing commercial corridors. The result is that far too few inter-neighborhood collectors have been achieved via the traditional local planning efforts.

What should Martinsville do at this point in time? Foremost is the need to structure a growth management process that enables the City to reserve and acquire the rights-of-way for essential street improvements. The Official Transportation Map is the only proper and unique growth management "tool" that fits this purpose. Relative to the City's ongoing planning efforts as infill development and redevelopment pose threats to obtaining additional rights of way, its inclusion should be a major priority. The cost/benefit of such planning to local government should be readily apparent upon close scrutiny.

City Employment Patterns and Travel Reduction

Economic development in the City over the next 20 years is projected to create 685 new jobs. Approximately 65% to 70% of new employment will be in the UDA-defined retail and office sector with the balance in industry, government, and education. Future employment could be distributed over a range of occupations, the locations for which will be subject to City planning and zoning oversight. The potential for travel reduction attributable to TND projects has been well documented in technical studies. High quality and well located mixed-use projects have been shown to provide employment for over half of their resident workers.

A 2005 transportation study of TND and conventional subdivisions performed by the University of North Carolina revealed that the average household TND trip distance was approximately 25% less than that created by the average suburban subdivision, with an average comparative trip length reduction of 12+ miles. The TND household made 9% fewer vehicular trips than the conventional residential household and owned 25% fewer automobiles per household.

In Martinsville, approximately 56% of employed residents work outside of the City (based on the US Census 2000). In-commuters to business establishments in Martinsville held 7 out of every 10 local jobs. The majority of the in-commuter population resides in Henry County along with in-commuter residents of the counties of Franklin, Patrick, and Pittsylvania. The City also offers employment for residents of communities in North Carolina.

While the Census provides no statistical data for travel length for Martinsville in-commuters, the TND trip reduction factor of 12 miles observed in the North Carolina study provides a very conservative benchmark that can be employed to assess the travel benefits of TND development in the City. However, based on regional employment distribution, 20+ miles for the average one-way commute would be a better estimate. The following table presents mileage estimates for *place of residence-to-place of employment* trip reductions for a prototypical TND project compared to a conventional subdivision that lacks both proximity and connectivity to places of work. Estimates are provided for only employment trips and do not include potential trip savings to the City from outlying areas for shopping, education, recreation, and other purposes.

Two scenarios are evaluated for both average daily and annual residence-to-work reductions. Scenario 1 assumes that (a) 25% of the growth in the employment sector during the UDA 2010-2030 projection period (new 171 employees) will be both working and residing within the Uptown planning area, (b) the TND resident portion of the employment sector will displace an equivalent number of commuter employees, (c) the net mileage reduction for the average displaced commuter trip will be 12 miles (one-way), and (d) the average work week is 5 days consuming an average annual 48 week employment period. Scenario 2 assumes that (a) 40% of the City employment workforce growth (274 new jobs) that is added between 2010 and 2030 (1822 employees) will be absorbed by TND resident/workers located in the two designated UDAs, and (b) a 20-mile one-way commuter trip/employee will be displaced. With the region lacking commuter-targeted transit service and organized carpooling opportunities, all commuter trips are assumed to be via private vehicle.

As indicated in the table below, the more conservative Scenario 1 estimates that the trip reductions resulting for the TND *place of residence-to-place of employment* trips will yield approximately one million fewer miles travelled per year for the TND-based workforce, while Scenario 2 estimates a savings of 2.6 million miles. The economic benefit to the TND resident produces noteworthy forecasts on energy consumption: In Scenario 1, the average TND resident/employee would travel approximately 5800 fewer miles than one's commuter counterpart. With gasoline prices at $3.60/gallon and 20 mpg fuel efficiency, the resident worker would save over $1000/year in work-related fuel expenditures. The results for Scenario 2 would yield a savings of 9600 miles travelled and $1700+ in fuel expenditures.

From an economic viewpoint, the total TND fuel savings for Scenario 2 would be roughly $470,000/year. The realization of Scenario 2 would yield a total annual fuel reduction for TND resident/workers of 130,000 gallons, which further translates into more subjective benefits, such as quality of life, highway safety, natural resource conservation, and reduced emissions.

The City of Martinsville

TND/Resident Employment Trip Reduction Estimates

Martinsville
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TND Employment vs. "Status Quo" Employment Patterns

	% Distribution	UDA Projection Period		
		2010-2020	2020-2030	2010-2030
City Employment Growth Increment *		**216**	**469**	**685**

Scenario 1: TND Resident Average Daily Employment Trip Mileage Reduction

TND Residential/City Employment Capture = 25%; assumed one-way mileage reduction = 12 miles.

		miles	*miles*	*miles*
TND Commercial and Office	*70%*	907	1970	2877
Non-TND Commercial	*18%*	233	507	740
Government and Education	*12%*	156	338	493
Average Daily Reduction		**1296**	**2814**	**4110**
Average Annual Reduction		**311,040**	**675,360**	**986,400**

Scenario 2: TND Resident Average Daily Employment Trip Mileage Reduction

TND Residential/City Employment Capture = 40%; assumed one-way mileage reduction = 20 miles.

		miles	*miles*	*miles*
TND Commercial and Office	*70%*	2419	5253	7672
Non-TND Commercial	*18%*	622	1351	1973
Government and Education	*12%*	415	900	1315
Average Daily Reduction		**3456**	**7504**	**10960**
Average Annual Reduction		**829,440**	**1,800,960**	**2,630,400**

* *Employment estimates by the Cox Company per UDA population projections (see Appendix)*

IX.

Martinsville
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- TND Implementation -

IX.

TND Implementation

The Urban Development Areas are separate and distinct planning areas recognized by the City on the Future Land Use Map for Traditional Neighborhood Development forms of land use, and are an essential component of the Comprehensive Plan. In essence, the Comprehensive Plan articulates the land use vision and design principles while the Future Land Use Map establishes the geographical boundaries of the UDA. The implementation process for individual TND projects should afford an applicant the opportunity to create a TND plan and development proposal for a specific project at a specific location within the UDA.

From an implementation standpoint, the TNDs are somewhat different from other zoning practices. The TND promotes compact, mixed-use development with a village scale, density and infrastructure configuration that requires enhanced zoning techniques. However, there is no single, existing zoning district in the Martinsville City zoning ordinance that fulfills the range of TND principles cited in the UDA Comprehensive Plan Amendment.

Many TND zoning district structures have been promoted and tested throughout the United States over the past generation, each having their own assets and liabilities to controlling growth within the designated UDA. In arriving at the best type of TND district for the City, a range of alternative TND ordinance formats were considered. For the City, the most effective governing document in the implementation system will be a new, freestanding TND zoning district.

The recommended TND zoning application structure will be one triggered by a private sector zoning amendment application. It provides the platform on which the City and the development community interface to create new projects. In creating this district, the underlying strategy is to create and employ a regulatory device that promotes:

(1) creativity and flexibility for the applicant in establishing the TND master plan, mix of uses, and densities that best serve the land use and marketplace objectives for the project,

(2) essential and sufficient regulatory controls by the City to translate the TND master plan into a unifying zoning code that ensures the agreed mix of uses, neighborhood organization, lot and building types, density, development phasing, and community infrastructure, and

(3) the most efficient and cost effective allocation of City management and administration resources.

The ideal TND district is one that is tailored to the particular needs of the City. For Martinsville, the TND district should be one that can best translate the Comprehensive Plan's TND planning policies into a manageable regulation that recognizes:

1. the character of the key regional location of the Uptown development area within the City,

2. the existing demographic composition of the City,

3. the Uptown UDA's potential to accommodate the projected level of population and residential growth,

4. its compatibility with the UDA land use designation,

5. the physical development potential and limitations of individual properties where TND rezonings may be appropriate,

6. the extent to which the City is committed to employing a transect-based comprehensive planning ethos to the entire city, and

7. the technical and administrative resources of the City.

PHYSICAL FRAMEWORK FOR THE TND DISTRICT

In order to recognize the unique physical requirements for residential, cultural and the shopping components of any city, the TND District is made up of several Sub-Districts. Sub-Districts are geographical planning areas internal to the TND that are unique in their physical character, intensity of development, and land use composition.

Three primary TND Sub-Districts--**Core (Village Center), Transitional, and Residential**--are structured to differentiate the geographical location of internal land uses, mix of uses, densities and other design parameters of land use groupings. A fourth Sub-District, reserved for Commercial Corridors, allows for specialized and conditional accommodation of certain large scale commercial, manufacturing, warehousing, and other employment uses that are not commonly located within traditional neighborhood developments, but that may be included for economic and convenience reasons. Given geographical and marketplace conditions, every TND application may not require that all sub-districts be included. During the TND application process, the Applicant and the City will determine the optimal mix and match of sub-districts.

The Core (or Village Center) Sub-District is intended to replicate and add to existing Uptown business and residential uses, providing neighborhood-scaled retail shops, restaurants, service, and civic uses. The Transitional Sub-District is intended to accommodate a transitional mix and lower intensity of uses in areas that separate the Core Sub-District from the lower density Residential Sub-District. The Residential Sub-District provides the structure for neighborhoods with lower density residential uses than those found in the Core and Transitional areas. Mixed housing types, sizes, and lot types are recommended, with guidelines for the mix established with each TND District application. The Economic Development Sub-District recognizes that certain uses of a higher density and community impact may be appropriate for inclusion in a TND District zoning application but, due to type, scale and intensity of use, are inappropriate for the other sub-districts.

TND Implementation System

There are two essential components that comprise an effective and comprehensive TND implementation program. A TND zoning district coupled with enhanced subdivision amendments should be drafted along with a clear administrative process that defines the desired level of plan review and oversight by the City. However, this process should be efficient and not force unnecessary road blocks and time delays on private sector applicants. A properly structured TND District can provide the platform on which the City and the development community interface to create new projects. Private and public sector project objectives are often competing. While comprehensive planning is conducted in a public venue, project master planning for private development is often originated outside the public's view. The TND zoning district and its companion administrative process should bring these two together.

The Applicant begins the zoning process with the submission of a Code of Development. The Code of Development is essentially a "mini-zoning ordinance" that is written to meet the specific needs of the property, its location, the marketplace, and the City's ability to provide adequate public infrastructure. Fundamentally, the Code must demonstrate the feasibility and appropriateness of the planned TND project. The rezoning application process allows the Applicant to present the plans, zoning regulations, and agreements that translate one's purpose and intent for the project into a set of efficient regulatory contrls . The use of the Code of Development is intended to better define the mix, scale, character, form and intensity of any given development proposal than that which could be otherwise governed by the City's conventional zoning districts. The TND District should incorporate the following application requirements:

A. TND application Plan: The application plan establishes the physical and geometric organization of the community. It includes a graphic representation of the existing site conditions, the proposed physical layout of the project, the location of proposed TND Sub-Districts, and planned open space.

B. **Development Code:** The code provides the regulating criteria and guidelines for the Sub-Districts within the community. Similar to conventional zoning districts, it provides documentation for permitted and special permit land uses, building minimum and maximum density, lot types and yard dimensions, building heights, mix of uses, and parking requirements for each of the TND Sub-Districts.

C. **Street Classification Plan:** The street classification plan (often referred to as a "regulating plan") provides planning for any new streets proposed within the project. It describes the location and category of streets to be developed within the project, establishing recommended street widths, utility and landscape placements, street lighting, on-street parking, and right of way designations.

D. **Building Form and Landscape Guidelines:** Building and landscape guidelines establish the desired level of cohesiveness and harmony in the community's overall design scale and theme. These guidelines provide the documentation and graphics to describe the proposed characteristics of building design and landscape architectural improvements for each TND Sub-District.

E. **Schematic Infrastructure Plans:** The compact nature of TND projects requires close design and construction coordination for public infrastructure. The infrastructure schematics provide the recommended layouts and easement requirements for site grading, sanitary sewer, domestic water, and other utilities and facilities. Recognizing the critical importance of environmental controls, this section provides the opportunity for the Applicant and City to work jointly in developing a comprehensive approach to storm drainage systems, stormwater management facilities, and best management practices.

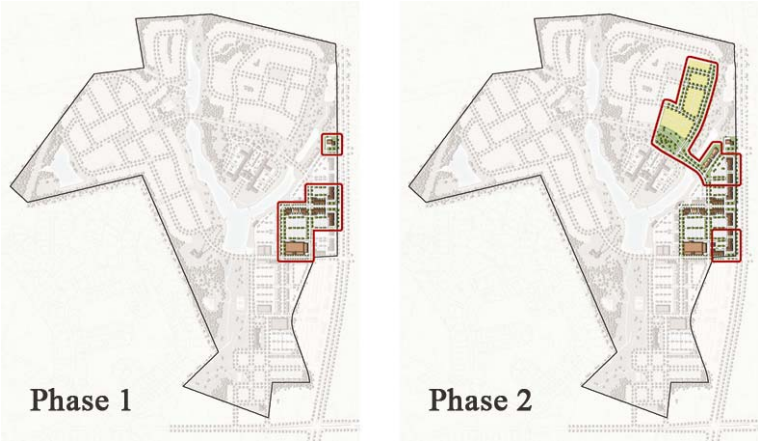
F. **Traffic Impact Analysis (TIA):** The TIA demonstrates the overall impact of the existing transportation system as well as future traffic generated by the proposed community. The typical TIA study analyzes the need for both on-site and off-site transportation improvements. Where the master plan generates minimum traffic demand thresholds, the study is prepared in compliance with VDOT 527 and SSAR standards.

G. **Zoning Conditions and Proffer Agreements:** A TND project provides wide flexibility to a property owner to plan a fully integrated mixed-use project. Once the master plan and code of development is established, other details related to the implementation framework are documented by proffer agreements and special conditions.

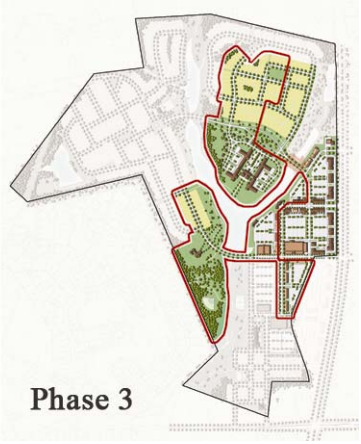
Phasing

In the few remaining areas of Uptown where larger, master planned development is still possible, specific attention should be given to project phasing. Large TND developments are often built in a series of phases, primarily for market and economic reasons, but also due to infrastructure capacity and extensions related to adequate public facilities. From the developer's perspective, commercial and residential units can only be built at the pace at which business owners or residents are willing to buy them. From the local government's perspective, new commercial and residential units cannot be allowed to outstrip the locality's ability to serve them with public utilities, police, fire, and rescue services, and schools, among other concerns.

The City should carefully consider the optimal number of new residential and commercial units that can be served by City facilities over time. If facilities are limited, the phasing of a project should be linked to the adequacy and availability of public facilities. By entering into proffer agreements with potential TND land developers, the City can, and should, restrict large TND developments to a phased development schedule that limits new building to a reasonable rate based on building permits or utility connections.



Early TND development phases should concentrate on areas of a larger property with direct and visible access to transportation, such as a major arterial road. A mix of land uses is desirable at all phases of the development, but cannot always be guaranteed if market support does not exist. Commercial development may be more predominant when there is substantial existing residential development nearby. When there is little existing residential development, residential will need to come first in order to support later commercial growth.



A development in multiple phases should build from a central point, not begin development of a remote pocket of development that does not relate to earlier phases. New development should extend the community's grid of streets, and strive to complete the vision for the TND. Care should be taken in all new phases to avoid disruptions to existing homes and businesses.

Conclusion

By establishing the Urban Development Areas outlined in this document, and by embracing new development on the scale of the existing Uptown, rather than in suburban patterns, Martinsville has an opportunity to strengthen and revitalize its core area, and to put itself in the best possible position for future infrastructure investment. City-scaled development patterns are what makes Martinsville a unique place within its region, and should be further encouraged as a way to maintain or improve the quality of life of its citizens.