



7: ENVIRONMENTAL STEWARDSHIP

Using land efficiently and linking the land uses to transportation moves Tysons toward becoming a sustainable community. Tysons has a unique opportunity, however, to become a leader in environmental stewardship. The vision and plan for Tysons set out a desire for improved air quality, energy conservation, stream restoration and protection, green architecture, and restored and enhanced natural environments.

Over the next 25 years, more will be understood regarding the effects of low impact design, LEED construction, enhanced transportation demand management strategies, and the impact of transit oriented design. New energy technology will provide opportunities for further innovation. With this knowledge, additional steps in building design and urban planning can be implemented to achieve the long-term goal for Tysons of carbon neutrality by 2030 and continuing leadership in environmental protection.

GREENING TYSONS Placing a strong focus on the environment requires:

- A connected system of parks and greenspace throughout Tysons.
- Green building standards.
- A rigorous stormwater management strategy.
- Restoring existing streams.
- Setting aggressive goals for auto independence.

MORE SUSTAINABLE THAN TYSONS TODAY

By implementing the concept of TOD, the Tysons of tomorrow will be more sustainable than the Tysons of today. National studies have shown that TOD provides increased transit ridership. TOD improves the efficiency and effectiveness of transit service investments by increasing the use of transit near stations by 20 to 40 percent, and up to five percent overall at the regional level. TOD reduces rates of VMT. Nationally, vehicle travel has been increasing faster than population growth. TOD has proven to lower annual household rates of driving by 20 to 40 percent for those living, working, and/or shopping within transit station areas. Recent TOD research shows that automobile ownership in TOD is approximately one half the national average. By providing safe and easy pedestrian access to transit, TOD has produced lower rates of air pollution and energy consumption. TOD can also reduce rates of greenhouse gas emissions by 2.5 to 3.7 tons per year per household.

In addition, green building design, as encouraged through the Leadership in Energy and Environmental Design (LEED) certification program reduces operating costs which is a measure of energy consumption. By requiring LEED certified buildings, or the equivalent certification, the carbon footprint can be further reduced.

Tysons redevelopment reduces carbon emissions to help achieve 80 percent carbon reductions by 2050 in accordance with the Cool Counties Policy established by the Fairfax County Board of Supervisors. These reductions will require reducing emissions from transportation and buildings.

Reductions in greenhouse gas emissions from the transportation sector will be achieved by reducing vehicle miles traveled. Focusing development near Metro stations and the dedicated right of way circulator, and constructing walkable, bikable, mixed use developments will reduce VMT. Aggressive TDM programs, including parking management, are also critical to achieve VMT reduction goals. See the Transportation section for detailed discussion of elements that should be incorporated in TDM programs.

More compact development, like that proposed in the concept for Tysons, uses less energy consumption than low density, suburban style development. For residential housing, the energy consumption rates decrease on a per capita basis as the density increases.

In addition, green building design, as encouraged through the LEED certification program, reduces energy consumption. All buildings in Tysons approved in 2013 or thereafter shall be certified at least LEED-silver or equivalent. Prior to 2013 all new buildings in Tysons shall achieve LEED basic certification or equivalent. All of these efforts are part of the long-range goal of achieving carbon neutrality for Tysons by 2030.

STORMWATER MANAGEMENT

Downstream segments of Old Courthouse Spring Branch Rocky Run, Scotts Run, and Pimmit Run outside of Tysons shall be protected by reducing runoff created by the impacts of impervious surfaces within Tysons. By creating an updated approach to stormwater management, the downstream stormwater problems can be mitigated and downstream restoration efforts be facilitated.

Achieving these stormwater goals will require managing runoff equivalent to predevelopment forested conditions. Techniques to reach this objective can include, but not be limited to, application of Low Impact Development Techniques like green roofs, as well as water reuse. Construction of the grid of streets shall help achieve this goal, by incorporating Low Impact Development techniques in the public right-of-way.

Stream restoration in Scotts Run and Old Courthouse Branch should be encouraged as part of a comprehensive strategy to restore the water quality and

BENEFITS OF GREEN BUILDING

Environmental Benefits:

1. Enhance and protect ecosystems and biodiversity
2. Improve air and water quality
3. Reduce solid waste
4. Conserve natural resources

Economic Benefits:

1. Reduce operating costs
2. Enhance asset value and profits
3. Improve employee productivity and satisfaction

Health and Community Benefits:

1. Improve air, thermal and acoustic environments
2. Enhance occupant comfort and health
3. Minimize strain on local infrastructure
4. Contribute to overall quality of life



“Urban parks are often the cornerstones of vital, healthy urban communities”

George T. Frampton, Jr.,
Former chair,
White House Council on
Environmental Quality

ecological health of Tysons’ streams, and as part of the parks and open space network for Tysons. Much of the stream valley land is owned by the Park Authority; partnerships with the Park Authority to implement stream restoration projects should be encouraged.

GREEN ARCHITECTURE

Buildings in TOD centers are presently required by Fairfax County to have LEED certification, or the equivalent. LEED Silver certification, or the equivalent, will be required of all buildings in Tysons approved by 2013.

Buildings are one of the largest consumers of energy. According to the U.S. Green Building Council, buildings use one-third of our total energy, two-thirds of our electricity, and one-eighth of our water. With the extensive redevelopment that will occur in Tysons, a prime opportunity exists to reduce the amount of energy consumed by the built environment through LEED certification, or equivalent certification, of new construction.

A recent study conducted by the New Buildings Institute concluded that LEED certified buildings use 25 to 30 percent less energy than non-LEED certified buildings. Gold and Platinum LEED certified buildings, the highest certification that can be achieved, have an average energy savings of approximately 50 percent.

As part of the land use approach for the Tysons Land Use and Transportation Concept Plan, increased density can be achieved through silver, gold, or platinum LEED certification.

In addition to green buildings, green roofs can enhance the natural environment within Tysons. Green roofs use the traditionally unused part of the building to grow vegetation. Public benefits of green roofs include increased stormwater retention, reduced greenhouse gas emissions, and improved air quality through filtration of airborne particles.

PARKS AND OPEN SPACE

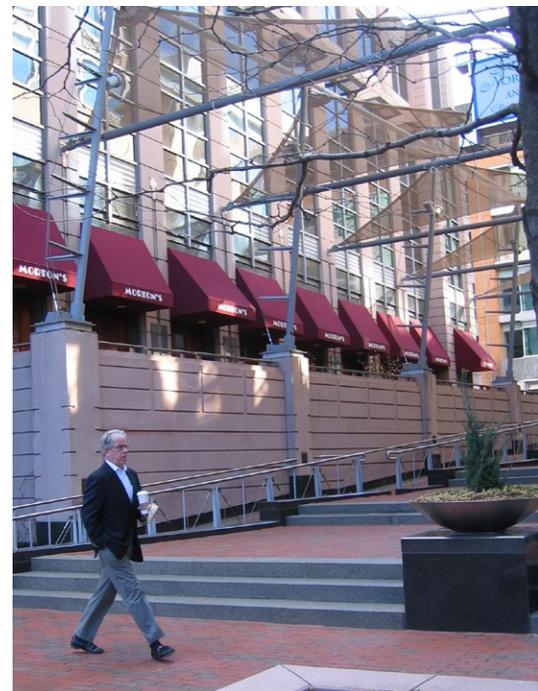
Parks will be an essential urban amenity for residential development in Tysons. Parks and open space provide visual breaks in the urban landscape, and places for people to be active, an especially important element with higher density housing that typically has smaller footprints and no backyards.

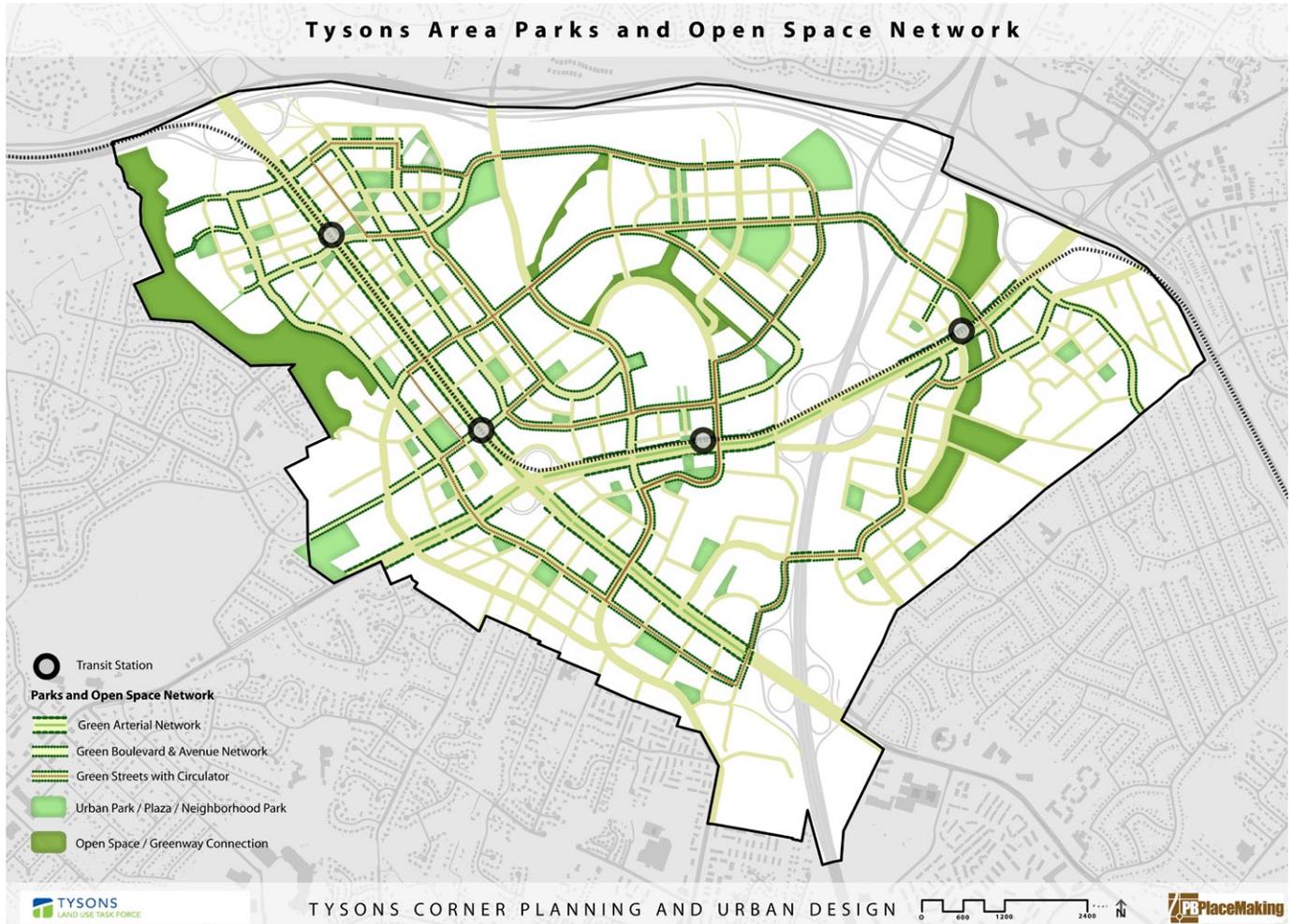
The vision for Tysons calls for a system of parks and open spaces that connects all the districts within Tysons through greenways and doubles park acreage to at least 160 acres. A unifying land use element within Tysons, the new parks and open space system will create gathering places that support community building, provide recreation and leisure opportunities, and provide an oasis of green, natural areas in an intensely urban environment. Urban parks improve air quality, reduce stormwater runoff and impervious surfaces, improve community health, and provide opportunities to allow people to recreate and meet their neighbors in a safe environment. Parks will provide a sense of place for Tysons and its individual neighborhoods.

The parks network will be closely connected to commercial activities and transportation to serve all who live work, visit and play in Tysons. The plan for Tysons’ parks system consists of enhancements to the Scotts Run and Old Courthouse Spring Branch stream valley parks, new small urban pocket parks, urban neighborhood parks, a large, centrally located public park, civic gathering spaces, rooftop parks, and green streets that provide opportunities for walking and bicycling throughout Tysons. Appropriate recreation facilities will serve a variety of needs and add to the vibrancy of Tysons.

The signature focal point of the park network will be a large civic gathering plaza. This publicly accessible park will include public art and multiple activity areas and will be large enough to support casual unprogrammed use as well as weekend craft fairs or farmers market, summer concerts or weekend festivals.

The parks and open space concept, shown on Map 7, creates a framework for an integrated system – one that has an overall vision of where parks should be located to best serve the overall needs of the residents and employees in Tysons. As part of the next steps, the long-range strategic parks plan should be developed to identify the preferred location of parks. The parkland can be publicly owned, privately owned, or a public-private partnership.





CONCEPTUAL MAP 7 - A connected system of parks and green space, green streets, green building standards and restoring streams will help create a green Tysons.

The types of parks and open space recommended for Tysons will include:

Large Central Park – At least a 3.5 acre park, it will be the signature park for Tysons. Large enough to support public, civic, and cultural events, this park could support a weekend craft or farmers market, summer concerts or weekend festivals.

Enhancement of Existing Parks - The restoration and enhancement of Scotts Run and Old Courthouse Spring Branch stream valley parks will strengthen Tysons existing natural systems and topographical features and will open up these areas for public enjoyment. These existing parks will also serve to connect other parks and open spaces and provide non-motorized transportation connections.

Multiple Urban Parks - a diversity of public spaces (plazas, squares, parks, greens, courtyards, gardens, playgrounds, and recreational facilities) ranging in size, function, and character, and providing both formal and informal gatherings, enable access for all who live and work in Tysons. Locating parks adjacent to residential and mixed-use office buildings will enhance these uses by providing common outdoor spaces to users who have no private yards. Integration of parks with residential and mixed-use developments will also provide “eyes” on streets and parks for a sense of public safety and activity focused on the park. All parks should be publicly accessible.

Examples of urban parks are:

- **Neighborhood Park** – Will serve as the recreational and social focus of the neighborhood, and offer a balance of multiple recreation activities to neighborhood residents within walking distances of homes. Focus will be on active (i.e., athletic courts, ballfields, and playgrounds) and passive recreation (i.e, trails, ornamental gardens, open play areas). Neighborhood parks may also provide for special open space needs of urban residents (i.e., dog parks, garden plots).
- **Civic Plaza** - Public spaces set aside for civic purposes and commercial activities. Usually located at the intersection of important streets or other significant locations. The landscape will be mostly hard-surface, and may have trees or other plantings, public art or water features.
- **Pocket-Park** – Small scale open space incorporated into developments and designed for the use of the people working and living in the immediate area. Designed as a single “room” to provide a limited or isolated recreational need.
- **Rooftop Park** - Rooftops of buildings, preferably accessible to the public, that will incorporate active or passive recreation space. Designed for the use of the people working and living in the immediate area. Should provide active recreation space (courts, fields) if possible.
- **Green Street Network** – A series of park-like boulevards will connect all of Tysons. This green network will offer non-motorized travel (trails, bikeways, walking and jogging trails) and will bring nature and green systems into Tysons. The green street network should incorporate LIDs to help meet stream restoration goals.



▼ Integrated Park Concept



DEDICATION OF PARKS

Development in Tysons will be allowed only if the development proposal is accompanied by a developer’s dedication of public or publicly accessible open space, or a contribution to a fund for local public parks in lieu of dedication of land. Although dedication of parkland on-site within Tysons will be preferred, a monetary contribution may be acceptable for smaller sites or where outright dedication of land is not possible. The dedication of land should be proportionate to the impact of the proposed development on park and recreation service levels. An urban park land standard of 1.5 acres per 1,000 residents and 1 acre per 10,000 employees will be applied during the development review process (For example, a new development with 330 dwelling units or 3,000,000 square feet of office space will each generate a need for about 1 acre of publicly accessible urban park space). In addition, recreational facility service level standards in the Park and Recreation element of the Countywide Policy Plan will be applied to residential developments. Impacts may be mitigated through onsite development of facilities and/or through monetary or in-kind contributions to the Park Authority for facility development at nearby parks.

PRIVATE PARK LAND

Any park land that will be privately developed and will be intended to contribute toward meeting the public parks and open space needs in Tysons must be publicly-accessible during appropriate hours and must meet or exceed the same park standards as any publicly owned and developed parks or open spaces. These parks shall be privately maintained.

ENVIRONMENTAL STEWARDSHIP GUIDELINES

Stormwater Design

1. Stormwater management and water quality controls for redevelopment should be optimized. Specific stormwater quality controls should use techniques and best practices that serve to return water into the ground or reuse it. The stormwater quantity and quality control rates of redeveloped parcels shall be returned to the predevelopment forested condition.

Environmentally-friendly stormwater design will be an initial and integral design principle that must be part of the conceptual stage of site development for all redevelopment. The stormwater design must utilize a combination of stormwater reuse, infiltration, and retention to improve downstream waters. The runoff from the redeveloped site should replicate the hydrograph of the site’s pre-settlement “good” forested condition.

LEED Certification

All new buildings in Tysons shall be LEED certified, or the equivalent. Existing Fairfax County policy calls for zoning proposals for nonresidential development and multifamily residential development of four or more stories in urban centers to incorporate green building practices. LEED certification at the silver level or equivalent shall be required by 2013. Development in Tysons should go one step further and seek LEED certification at the silver, gold, or platinum levels, with density bonuses to incentivize the highest levels of LEED certification or the equivalent.

Long Range Parks and Open Space Plan

An overall open space and recreation plan that adds and connects public and private open space, trails, and recreational facilities will be critical. The Fairfax County Park Authority should work with the Tysons implementing agency to create a long range parks plan for Tysons. The overall green infrastructure system should be planned and developed to integrate unique large and small urban park areas connected by pedestrian paths into the built environment of Tysons. This plan should incorporate any existing environmentally-sensitive areas and create safe pedestrian pathways throughout all neighborhoods. Links to public transit nodes, shopping centers, offices, and residential areas should be well-served by these connections.

Setting Future Environmental Goals for Tysons

For Tysons to remain the leader in environmental stewardship, the Plan will include the flexibility to provide mechanisms for implementation of ideas such as district energy systems, alternative energy sources, and district-scale environmental performance as these possibilities emerge. This will encourage the use of new technologies as they become available.

