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overview of process

The White Flint section of North Bethesda is a unique asset to Montgomery County. White Flint holds major growth potential in the local economy as a commercial center and as a redevelopment site for additional residential units. With an urban service area already supported by existing infrastructure and a Metro line, White Flint is poised to be a regional draw for shopping and a haven for its fiercely loyal residents.

However, White Flint currently suffers from significant mobility problems. Missing sidewalks and crosswalks, lack of a street network, and limited travel routes restrict growth and hurt White Flint's quality of life. These problems detract from valuable existing transportation infrastructure investments such as the Metro Redline and extensive regional bus services.

The development community is ready to redevelop Rockville Pike, the main thoroughfare of White Flint and North Bethesda. The success of these redevelopment projects depends on the success of mobility and accessibility through Rockville Pike. The problems facing White Flint are greater than any one agency or developer could solve alone. There are no silver bullets or quick fixes for Rockville Pike.

Glatting Jackson was commissioned to explore new and innovative transportation strategies to improve walkability and mobility in White Flint. Glatting Jackson's recommendations were developed in White Flint through a public process in which local residents, Montgomery County Planning Commission staff, and the development community explored large scale opportunities for the sector. A series of key design principles were developed and tested to increase the walkability of the sector. This report illustrates these recommendations and strives to support the current planning and development efforts in building a great urban district around the White Flint Metro Station.



a.

b.

complexity of cities

Cities have complex interrelationships among various social, financial, and design aspects. In order to prove an indisputable correlation of cause and effect among these variables, one would have to analyze a huge volume of data in an infeasible number and variety of cities.

Some correlations have been proven, which can be helpful, but they do not answer all the questions and often become the subject of debate. Consequently, county commissioners, governors, civic leaders, and policymakers must make decisions and set a direction for their communities utilizing limited data. Policymakers must pick their battles. Given conflicting advice and limited time, how can they possibly make good decisions? The following analogy suggests that they may actually be better off with less detailed information. Better decisions are made by the ability to recognize patterns.

A mosaic of white, grey, and black tiles. Detailed scientific analysis of the molecular composition of tiles, calculating the probability of two white titles being side by side, measuring the light emitted from each tile, and other detailed information does not help us understand what is going on. In fact, the detail can be distracting. It is better to step back from the mosaic, and even blur our vision to get rid of the detail.

b. The same set of tiles, but slightly blurred, shows a clearer picture. The specialized analyses do not contribute to the understanding of how the tiles relate to one another (i.e. the big picture).

A city is somewhat like a mosaic of tiles. Each tile can be over-analyzed forever, to no avail. It is much better for decision makers to first understand the city's big picture and then focus on a particular project, a series of initiatives, or their top three priorities.















current conditions

The current pattern of White Flint is fairly clear. The blocks are too big, contributing to circuitous routing, motor vehicle dependence, and unwalkable environments. Streets are too fast, big, and ugly; they lead to a hostile pedestrian environment, excessive vehicle speeds, divided communities unsafe for crossing, automobile-oriented land uses, and large impervious surfaces.

The pursuit of big roads, grade separation, single-use big box stores, and motor vehicle dominance can be supported only from the limited perspectives of a few special interest groups. The larger public interest involves creating healthier communities.

The White Flint Advisory Committee recognizes that the current pattern of development must change. It is clear that their vision for White Flint involves pursuing an urban district. Royce Hanson, Montgomery Planning Board Chairman, recently predicted in the *Washington Post*, "Most of our new development is going to be relatively high density near public transportation." Most realize that the future growth pattern for Montgomery County will be urban and along transit corridors.

This vision develops into easily recognizable patterns and is supported by the development community at large. However, the professional communities could benefit by changing their focus from their own specialties to working more cooperatively with each other to improve the bigger picture. Motor vehicular dependency and walkabilty issues fall mainly on the shoulders of the planning community.

AERIAL

White Flint is composed of many complex parts that are difficult to understand in a single image.



And and a second second

OPEN SPACE AND PARKS

Large regional parks surround White Flint, but there are very limited public open spaces located in the study area.

STREET NETWORK

White Flint has a very limited network of streets that requires nearly all the trips in the Sector to travel on or across Rockville Pike.





RESIDENTIAL SETTLEMENT PATTERNS

White Flint is surrounded by distinct residential neighborhoods.

BUILDING FOOTPRINTS

Generously spaced buildings with large footprints line Rockville Pike. The adjacent area consists largely of single-family detached housing.





COMMERCIAL

White Flint is primarily made up of commercial uses.

site analysis

Cities have very complex interrelationships. Underlying patterns, problems, and opportunities of the project area can be examined by isolating individual elements, patterns, and opportunities that are difficult to perceive when combined and viewed in a single drawing. From these patterns, the beginnings of strategies and solutions often emerge.

The need for additional street networks, open space, and a mix of uses becomes clear through these diagrams. As parcels and superblocks redevelop, there will be opportunities to build these needed connections.

These diagrams support the comments made during the public process. It is very clear that any new development needs to respect the integrity of the single-family neighborhoods that surround the commercial center.





White Flint 1992 Plan Proposed Land Use



a.

community vision

In 1992, the North Bethesda/Garrett Park Master Plan included the White Flint Sector Plan area.
Now, a separate White Flint Sector Plan is being created, providing an opportunity to focus on the area around the White Flint Metro Station. The Sector Plan also coordinates with the MD 355 Corridor Project that is currently underway.

At a meeting on November 6, 2006, Royce Hanson, Planning Chairman, provided opening remarks and staff presented information about the White Flint area and the MD 355 Corridor Project. Participants then split into eight groups and brainstormed about White Flint's future. Each group developed a list of desirable characteristics and a concept plan, summarized in a vision statement. The groups then presented their plans.

The concepts and ideas produced by the groups paint a picture of a vibrant White Flint as a special place centered on the White Flint Metro Station. The groups envisioned a greener White Flint Metro Station, friendly to pedestrians and bicyclists, with numerous choices of places for people to live, work, shop, and dine. All of the plans and ideas that came from those groups are formed the framework for the development of the White Flint Sector Plan.







- 1. Provide New Connections
- 2. Contextual Design
- 3. Untangling the Confluences
- 4. Add New Network
- 5. Build to the Street

urban district principles

In the course of the planning process, a number of common themes evolved from a combination of community-defined needs, aspirations, and natural and manmade frameworks. These themes are the basis for the recommendations for the White Flint Sector Plan, and are summarized through five simple design principles.

1. provide new connections



CONVENTIONAL APPROACH

Disconnected destinations increased trip length and overburdened the existing network. Large gaps in the network created barriers for pedestrians.





PROPOSED RECOMMENDATIONS

Strategic connections diversify transportation choices and expand walkability. Key connections over MARC tracks would increase driving routes. 1

2. contextual design



CONVENTIONAL APPROACH

State highway interstate standards were applied to urban areas which increased driving speeds, lane widths, and limited pedestrian access. With this language, proposals for intersections include costly fly-overs and ramps that require additional land and result in reduced land value.





PROPOSED RECOMMENDATION

The context for urban districts includes buildings up to the street, more people, pedestrian scale lighting, slower moving motor vehicles, on-street parking, and wide sidewalks.

3. untangling the confluences



CONVENTIONAL APPROACH

Confluences occur when separate roads converge. The number of through-lanes decreases and requires long, inefficient traffic signals.

PROPOSED RECOMMENDATION



Untangling confluences opens alternative routes. Alternative routes would relieve pressure on the main signal. The critical lane volumes (CLVs) for these confluence points are determined based on the total intersection volumes for each movement. Since the overall intersection volumes will decrease at the confluence points, the CLV values are expected to show similar decreases.



1

4. add new network



CONVENTIONAL APPROACH

Limited choices forced local and through trips onto a few large roads. This caused cycle congestion and anti-pedestrian road widening.



PROPOSED RECOMMENDATION

Adding secondary streets creates alternative routes and walkable block sizes. A more complete network of streets stops cycle congestion and road widening.





5. build to the street



CONVENTIONAL APPROACH

Parking fields facing Rockville Pike are a hindrance to walkability by placing the priority on the car and not the pedestrian. These suburban parking patterns detract aesthetically from the area, reduce walkability, and prevent desirable synergies between land uses. These factors combine with lower "natural surveillance" to harm the area from placemaking and modal split perspectives, ultimately reducing the potential for economic and social exchange.



PROPOSED RECOMMENDATION

In urban districts, new buildings are built to the street, with active uses and entrances facing onto sidewalks, which promote cafes and increase the pedestrian experience. The result will be a "park-the-car-once" environment which encourages multi-purpose trips and, thus, higher levels of social and economic exchange. The walkability and convenience is enhanced by onstreet parking for high turnover customers and off-street parking for longer stays. Combined with high levels of surveillance by the proper location and design of the buildings' "ground plane," the feelings of comfort, safety, and sense of welcome are increased.













b.

bones

A lot can be told about something by its bones. This creature's bones tell non-experts that it was a land animal because of the feet, that it walked upright because of the relative size of its legs, and that it ate meat because of the shape of its teeth.

Cities can be examined in a similar way. The city on the left has a healthy network of streets, multiple routing options, and good access to public spaces. It is walkable and the buildings are close to the street. The city on the right has a disconnected street pattern. It lacks routing options. It is vulnerable to collisions due to its lack of redundancy. There are parking lots in front of the buildings. It is unwalkable and motor vehicle-oriented. It should come as no surprise that we are contrasting Savannah, GA with Irvine, CA.

A similar study can be made with White Flint. The current street network in White Flint is similar to the disconnected pattern of Irvine. The Montgomery County Planning Board and development community understand this deficiency and have begun to facilitate change by proposing a network of streets in their plans. As new development is proposed for the sector, additional finer-grain street networks should be added. New streets should connect and align to existing roadways and large blocks should be divided to create more opportunities for walking.



b.

a.

network

Today, there are limited choices for routes through the sector. Disconnected destinations increase trip length and overburden existing networks. Large gaps in the network create barriers for pedestrians. All of the trips to the sector are forced to travel onto a few large roads. These large roads all cross or merge with Rockville Pike, which cause intersection cycle congestion and requests for road widening. Both result in anti-pedestrian roads that decrease walkability.

Adding secondary streets creates alternative routes and walkable block sizes. A more complete network of streets stops cycle congestion and road widening. Much of this needed network has been proposed by both the Montgomery County Planning Board Staff and the development community.

Strategic connections should be made to diversify transportation choices and expand the network and walkability. A key connection between Executive Boulevard and Randolph Road over MARC track would provide a safe alternative route across the rails. Extending Marinelli Road to Old Georgetown Road would provide an additional East-West connection across Rockville Pike, and relieve neighborhood cut-through traffic.

Several recommendations have also been made to untangle confluence points in the proposed plans. Confluence points occur when separate roads converge and the number of through-lanes decreases, which requires long, inefficient traffic signals. Untangling these confluences would open alternative routes and relieve pressures on main intersection signals.

Money that would be used to acquire land for road widening or increasing the size of existing intersections can be better spent on new roads and new street connections which will actually help to decrease trip length and truly relieve overburdened roadways.



build to the street | form-based code

One of the most important aspects of street design is the location of the buildings along the street. In fact, the street environment extends from the building face to building face across the street. The building facades contribute to the public realm.

Many cities require buildings to be built up to the street. This is a very positive requirement because it improves the pedestrian environment, the transit environment, natural surveillance, and other urban attributes.

Design parameters should be developed for a Form-Based Code. The new code should regulate development to ensure high-quality public spaces defined by a variety of building types and uses including housing, retail, and office space. These design parameters should incorporate a regulating plan, building form standards, street standards (plan and section), use regulations as needed, descriptive building or lot types, and other elements needed to implement the principles of functional, vital, and sustainable urbanism along with practical management of growth. Sections of this document would typically include the following:

- Overview, including definitions, principles, and intent. Explanations of the regulations and process in clear user-friendly language.
- Regulating Plan (a schematic representation of the master plan) illustrating the location of streets, blocks, public spaces (such as greens, squares, and parks), and other special features.
- Regulating plans may also include aspects of Building Form Standards such as "build-to-lines" or "required building lines" and building type or form designations.
- Building Form Standards governing basic building form, placement, and fundamental urban elements to ensure that all buildings complement neighboring structures and the street. These standards should be based upon a study of building types appropriate for the region, climate, and neighborhood vitality.
- Public Space/Street Standards defining design attributes and geometries that balance the needs of motorists, pedestrians, bicyclists, and transit riders while promoting a vital public realm. These standards should include design specifications for sidewalks, travel lane widths, parking, curb geometry, trees, and lighting.
- Optional sections may include building or lot types, architectural standards (exterior materials and quality), landscape standards, parking location, and parking management standards.



a.

b.

walkability

Walkability is the cornerstone of an efficient urban area's ground transportation system. Every trip begins and ends with walking. Walking remains the cheapest form of transport for all people and the construction of a walkable community provides the most affordable transportation system any community can plan, design, construct, and maintain. Walkable communities put urban environments back on a scale for sustainability of resources (both natural and economic) and lead to more social interaction, physical fitness, and diminished crime and other social problems. Walkable communities are more livable communities, leading to whole, happy, healthy lives for the people who reside in them.

On average, a pedestrian can travel approximately ¼ of a mile in 5 minutes, and a ½ mile in ten minutes. A ten minute walk is a reasonable distance that people will walk to get to mass transit such as the Metro. Radial diagrams show us that much of the sector is within a ten minute walk of the Metro station. Unfortunately, the actual pedestrian shed cannot be maximized to its full potential due to missing sidewalks, street crossings, and large blocks. A sparse street network limits pedestrian mobility and large congested roads often pose a challenge to the perception of safety and prosperity.

a.

The Montgomery County Planning Board Staff and development community have developed a plan that begins to address these deficiencies by adding new street connections through sites as they redevelop. Mobility increases for pedestrians as the street network becomes more connected. The actual pedestrian shed begins to grow, but super-blocks and confluences still limit the actual pedestrian shed.

Once the confluences are removed, additional network is added, and new connections are proposed, the pedestrian shed extends. New road connections, such as the Randolph Road Extension, allows the pedestrian shed to reach across the rail lines for the first time. As the pedestrian area of access increases, so does the opportunity to improve community image and vitality through thoughtful design. An attractive neighborhood literally grows with the street network.







great streets

Great streets are celebrated places that accommodate pedestrians, transit, and cars. The pedestrian environment includes wide sidewalks with opportunities for street furniture such as bike racks, benches, and tree plantings. These elements encourage shops and cafes to open onto the street, creating a place that is walkable, vibrant, and full of activity.

Images from as far away as Vancouver, Canada and Boulder, CO or as close as the District of Columbia inspire the possibilities for Rockville Pike.











back-in angled parking

Walkable cites promote on-street parking in their urban cores and a number of cities across the country are providing back-in angled parking. There are dozens of advantages to back-in parking. Compared to parallel parking, up to 90% more parking can be accommodated. Along with the benefit of additional parking, back-in angle parking is far safer than parallel parking. With bigger cars parked in adjacent spots, it is easy to see when it is safe to pull out because the driver is able to pull out directly into the street. Parents find this method sends their children to the sidewalk rather than into the street. They also report it is easier to get child carriers into and out of their cars. Bicycles love back-in angle parking, as they can see the drivers and the drivers can see them.

Seattle, WA is a pioneer of back-in angled parking. Today, they have more than 200 blocks installed. They are adding another block or two each month and are finding many positive results. Street parking only takes up one-third of the space of off-street parking. As cities and even small villages add density and walkability, many adapt these parking tools.

It's as easy as 1, 2, 3. Signal, Stop, Back In.









rockville pike

Rockville Pike is the signature address of White Flint. As parcels are redeveloped, buildings will be brought to the street addressing Rockville Pike with active uses and entrances. Wide sidewalks will line the corridor to accommodate pedestrians, cafes, trees, and street furniture. Tree wells, curb extensions between back-in on-street parking, and a center median will provide an opportunity for shade trees, and allow for innovative sustainable techniques in stormwater management. Bike lanes will be provided to encourage alternative modes of transportation.

The entire corridor will have 6 lanes of through traffic. When back-in angled parking is present, an additional lane will be provided to accommodate parking, turns, and buses.

The street section for Rockville Pike will change slightly through the corridor. For limited sections of the corridor north of Marinelli Road, the back-in angle parking can be removed on the east side of the road, and the median narrowed. As future properties redevelop on the east side of the road, they may choose to add the back-in angled parking on their property.



a.

34

montrose parkway interventions

The intention of Montrose Parkway was to increase the regional East/West trips through the White Flint Sector by grade separating the new Montrose Parkway from Rockville Pike. However, the proposed grade separation, high-speed interchanges, and ramps would change both speed dynamics and expectations as people come into the center of White Flint. Additional confluence points would be added on Randolph Road, Montrose Road, Montrose Parkway, Old Georgetown Road, and Rockville Pike as a result.

The Interstate Highway design grade separation is being incorrectly placed in the Urban District. This decision would limit the opportunity for a new street network North of Executive Boulevard and North of Old Georgetown Road.

Contextually, Montrose Parkway and Rockville Pike should meet at an at-grade intersection. An at-grade intersection is more walkable, reduces the barrier effect of tunnels and bridges, and will save the County an enormous amount of money in construction costs. This savings could be spent on more effective transportation strategies such as additional street networks and improvements along Rockville Pike.

at grade intersection

- 1. Respects the context of an Urban District.
- 2. Untangles confluences and prevents new ones from being built.
- 3. Provides opportunities for additional networks and new street connections.
- 4. Allows for buildings to be built close to the street facing both Rockville Pike and Montrose Parkway.
- 5. Costs less to build. Savings could be used to build new networks or improve the aesthetics of Rockville Pike.







CONVENTIONAL APPROACH



transportation analysis assumptions

As part of the White Flint Sector Plan, the transportation analysis currently underway establishes baseline conditions for the charrette network analysis. Since the County's analysis is not finalized, a "Working Draft" was provided by County Staff which consisted of land use data, roadway network, and projected model volumes for Scenario 2A.

Sector Plan Land Use

The baseline analysis (Scenario 2A) assumed the following land uses within the study area:

- Office 7 million sf
- Retail 5.2 million sf
- Other Commercial 800,000 sf
- Industrial 1 million sf
- High-Rise Residential Units 13,000

Other Assumptions

The traffic analysis completed for the White Flint Sector Plan assumes a transit mode share based on the County's long-range goals for the White Flint Station area. The traffic model also projects that the share of trips internal to the study area would increase over time. The same assumptions were used for this analysis to provide a conservative comparison.

However, an improved pedestrian environment with new local streets will increase the potential transit mode share, since more of the study area will be within walking distance of the Metro Station. A pedestrian-friendly network of local streets will also increase internal trips by making travel within the White Flint area easier for all modes. A local trolley serving the White Flint area will also help increase the transit mode share and internal capture. This translates into reduced traffic impacts for new development.



CONVENTIONAL APPROACH

PROPOSED RECOMMENDATION

	Number	Number of Lanes	
North-South Roadway	Sector Plan	Proposed Street Network	
MD 187 (Old Georgetown Rd.)	6	6	
Former Executive Blvd.	4	4	
Woodglen Dr.	2	2	
MD 355 (Rockville Pike)	6	8	
Chapman Ave.	2	2	
New Local Street	0	2	
New Local Street	0	2	
Nebel St.	2	2	
Parklawn Dr.	4	4	
Total	26	32	
Additional Capacity Lanes		6	
Additional Network Capacity (peak hour volume)		4,800	





CONVENTIONAL APPROACH

PROPOSED RECOMMENDATION

	Number of Lanes		
East-West Roadway	Sector Plan	Proposed Street Network	
Chapman Ave.	0	2	
Montrose Rd.	0	4	
Montrose Pkwy.	4	4	
New Local Street	0	4	
Executive Blvd. Extended	4	4	
New Local Street	2	2	
Marinelli Rd.	4	4	
Nicholson Ln.	4	4	
Former Executive Blvd.	4	4	
Security Ln.	2	2	
Edson Ln.	2	2	
Total	26	36	
Additional Capacity Lanes		10	
Additional Network Capacity (peak hour volume)		8,000	



Benefits of Removing Confluence Points

	PM Peak Hour Intersection Volume			
Confluence Point	Sector Plan Configuration	Proposed Network	Reduction	
Executive Blvd. / Old Georgetown Rd.	7,700	6,500	-16%	
Montrose Rd. / Montrose Pkwy. / Old Georgetown Rd. Extended	7,500	5,500	-27%	
Old Georgetown Rd. Extended / Rockville Pike	8,200	7,400	-10%	
Montrose Pkwy. / Randolph Rd.	9,400	7,800	-17%	

Overall, the critical lane volumes (CLVs) for the intersections along Rockville Pike are expected to decrease with the addition of new East-West cross streets, due to the following:

- Left turn movements off Rockville Pike will be distributed among more intersections. This reduces the amount of traffic conflicting with through movements at each intersection.
- East-West traffic will be distributed among more streets, also lowering the conflicting traffic volumes at each intersection.

Both these factors will allow more green time to be available for through traffic along Rockville Pike.



CONVENTIONAL APPROACH



PROPOSED RECOMMENDATION

Summary of Rockville Pike Traffic Volumes					
	Estimated PM Peak Hour Volumes				
Roadway Segment	Sector Plan	Proposed Network			
North of Chapman Ave.	6,400	6,400			
Old Georgetown Rd. Extended to Chapman Ave.	7,200	6,200			
Montrose Pkwy. to Old Georgetown Rd. Extended	6,000	5,400			
Mid Pike Plaza to Montrose Pkwy.	6,400	4,800			
Old Georgetown Rd. to Mid Pike Plaza	7,000	5,200			
Marinelli Rd. to Old Georgetown Rd.	4,900	4,500			
Nicholson Ln. to Marinelli Rd.	4,400	3,900			
Executive Blvd. to Nicholson Ln.	4,600	4,500			
Edson Ln. to Executive Blvd.	4,900	4,900			
Strathmore Ave. to Edson Ln.	7,500	7,500			









densities can rise as:

- 1. Network is increased.
- 2. Walkability is improved.
- 3. Supporting public transit is increased.
- 4. A mix of complimentary land uses increases in the station area.
- 5. Parking requirements are reduced.
- 6. Design speeds on main roads are lowered.
- 7. Buildings address the street.
- 8. Time passes.
- 9. Energy, environment, and health issues rise in importance in public opinion.
- 10. The area is designed to be less car-oriented.
- 11. Densities rise (i.e. density supports density).

next steps

Provide new connections.

- Some of these new connections may occur outside the White Flint Study Area Boundary, but would help within the boundary with walkablity, access, and system capacity.
- Extend Randolph, Marinelli, and Old Georgetown Road, to provide additional network and untangle the confluence points.

Design and build streets in the context of an Urban District.

- Rockville Pike should be designed as a Great Street that accommodates pedestrians, cyclists, transit users, and motorists. Buildings should be brought towards the street with active ground floor uses facing Rockville Pike.
- All streets should have wide sidewalks, street trees, and on-street parking.
- Replace the planned grade separations at both Montrose Parkway and Marinelli Road with urban and walkable intersections which are contextual to an Urban District. Cost savings from the grade separation should be used to increase walkability and network in the Urban District.

Untangle the confluences.

• New projects should result in additional routes and not result in additional confluences.

Add new network.

- As new development is built within the Sector, additional finer grain streets should be added.
- New Streets should connect with, and align to, existing roadways.
- Large blocks should be divided to create smaller blocks and more opportunities for walkability.
- Internal capture translates into reduced traffic impacts for new development. Though counterintuitive, additional density in mixed-use districts has less and less impact as densities rise.

Build to the street.

- New buildings should be built to the street, and parking should be located in lots or garages behind the buildings in the middle of the block.
- Design parameters should be developed for a Form-Based Code. New codes should regulate development to ensure high-quality public spaces defined by a variety of building types.
- Streets and parks represent the majority of the public space in the Sector.

notes

