Community Inventory

PILOT PROJECT

PHASE I

2018

Thomas Jefferson Planning District Commission

Regional Vision • Collaborative Leadership • Professional Service

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EXECUTIVE SUMMARY

In 2017, Albemarle County approached the Thomas Jefferson Planning District Commission (TJPDC) about conducting a community inventory of its development areas. This effort aimed to: identify public infrastructure in need of repair; identify neighborhoods that may require additional County assistance; provide existing conditions data for the County's planning processes; and, update the County's existing Geographic Information Systems (GIS) data. The inventory would include fieldwork, where a team of staff collected data on: street lights, signage, bike and pedestrian facilities, curb and gutter, transit stops, the conditions of public spaces, street trees, and housing conditions.

Rather than begin a full inventory of all County growth areas, which includes six percent of Albemarle's landmass, County and TJPDC staff decided to conduct a pilot project. The County and Planning District selected Neighborhood 7, in the Ivy and Barracks Road area. The group chose this area because of its more compact neighborhoods and older housing stock, which allowed for a better test of the housing inventory task. The goal of the pilot phase, in addition to the overall goals, was to finetune the process for additional phases of inventories.

In the spring of 2018, the weather warmed and TJPDC staff began this ambitious data collection effort. The fieldwork occurred over 900 acres, though the University property accounts for a large portion of this area. Staff reviewed over 1,000 parcels and over 35 linear miles of roadways. This pilot project report details the processes, assumptions, methodologies and findings of Neighborhood 7. This report also includes a lessons learned summary, to guide future phases of inventory work. While GIS data served as the main deliverable, this report should answer any questions related to those data layers.

1 INTRODUCTION

BACKGROUND

TJPDC and County staff met at the County Office Building on July 12th, 2017 for an initial discussion on a Community Inventory. County staff indicated their desire to conduct a detailed inventory of the County's designated growth areas, recording the conditions of several community elements. The inventory would include conditions of:

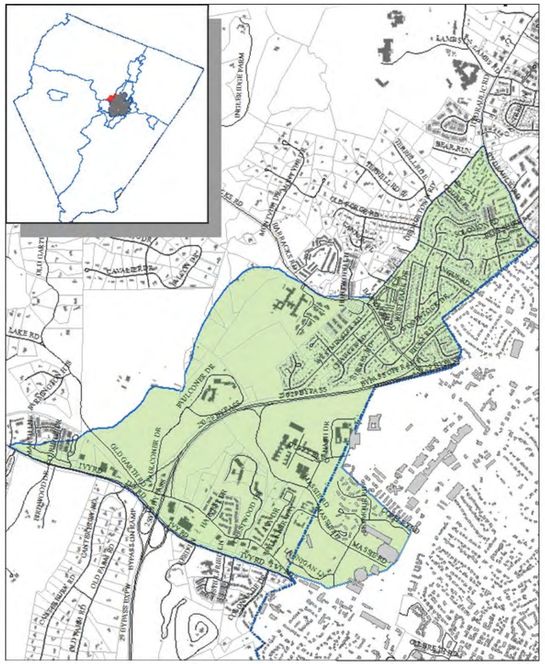
- Bike and pedestrian facilities
- Roads
- Parks and public spaces
- Public buildings
- Existing land uses
- Housing

PURPOSE

In meeting with County staff, the TJPDC understood that a Community Inventory is intended to yield valuable information that will help the County:

- Identify capital needs
  - Feeding into the Capital Improvement Program
  - For special funding opportunities, like the Neighborhood Improvement Funding Initiative (NIFI)
  - To work with VDOT on roadway and sidewalk improvements
- Identify housing needs
  - For housing improvement programs, such as AHIP
  - Informing the County's housing policies
  - Feeding into potential housing grant applications
- Provide more detailed data for other County efforts
  - For future updates of the Comprehensive Plan
  - Assisting with future grant applications
  - Informing County policies and programs
  - Providing more information to the County's neighborhood planner and staff

PILOT AREA



PROJECT TIMELINE

February *1st Half*	• Kick-Off Meeting • Follow-Up Meetings with County Department • Review of Project Methodologies
February *2nd Half*	• Follow-Up Meetings with County Departments • Agreement of Project Methodologies • Prep for Fieldwork
March *1st Half*	• County Sends Notifications to Community about Fieldwork • TJPDC Begins Fieldwork
March *2nd Half*	• Fieldwork Continues • County Quality Checks Fieldwork
April *1st Half*	• Fieldwork Continues • County Quality Checks Fieldwork
April *2nd Half*	• Fieldwork Continues • County Quality Checks Fieldwork
May *1st Half*	• Fieldwork Continues • County Quality Checks Fieldwork
May *2nd Half*	• Fieldwork Continues • County Quality Checks Fieldwork
June *1st Half*	• Fieldwork Continues • County Quality Checks Fieldwork
June *2nd Half*	• Completion of Fieldwork • Final Fieldwork Quality Checks • Formatting and Analysis of Data
July *1st Half*	• Formatting and Analysis of Data • Drafting of Final Report • Drafting of Data Maintenance Procedures
July *2nd Half*	• Finalizing of Final Report • Finalizing of Data Maintenance Procedures
August *1st Half*	• County Final Review of Deliverables • Wrap-Up Meeting
August *2nd Half*	• Drafting of Scope and Budget for Phase II Community Inventory • Follow-Up Meeting on Phase I and Phase II

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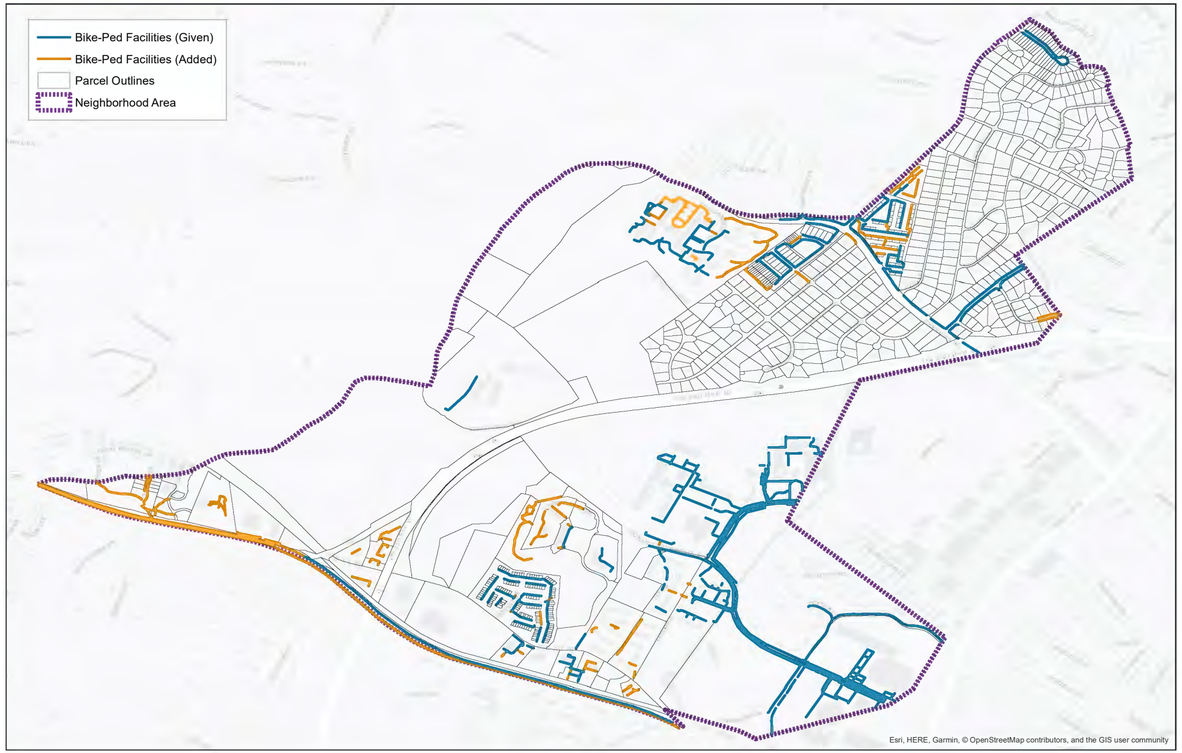
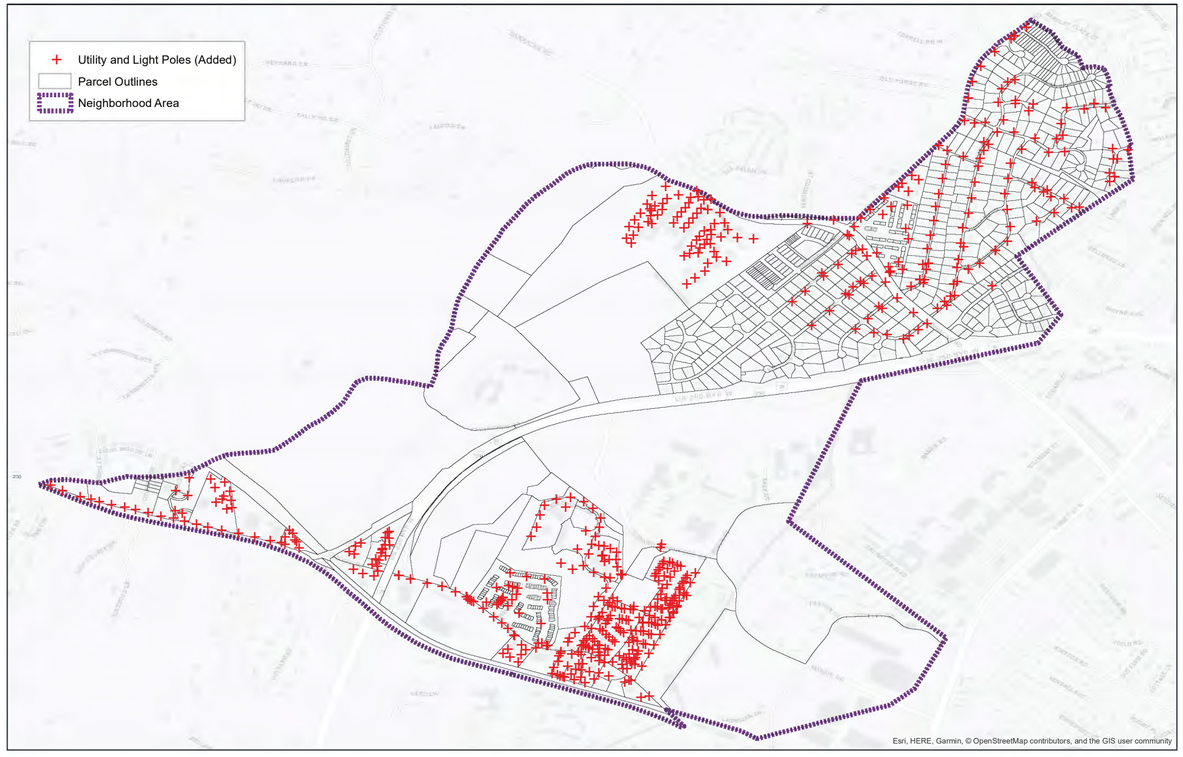
EXISTING CONDITIONS

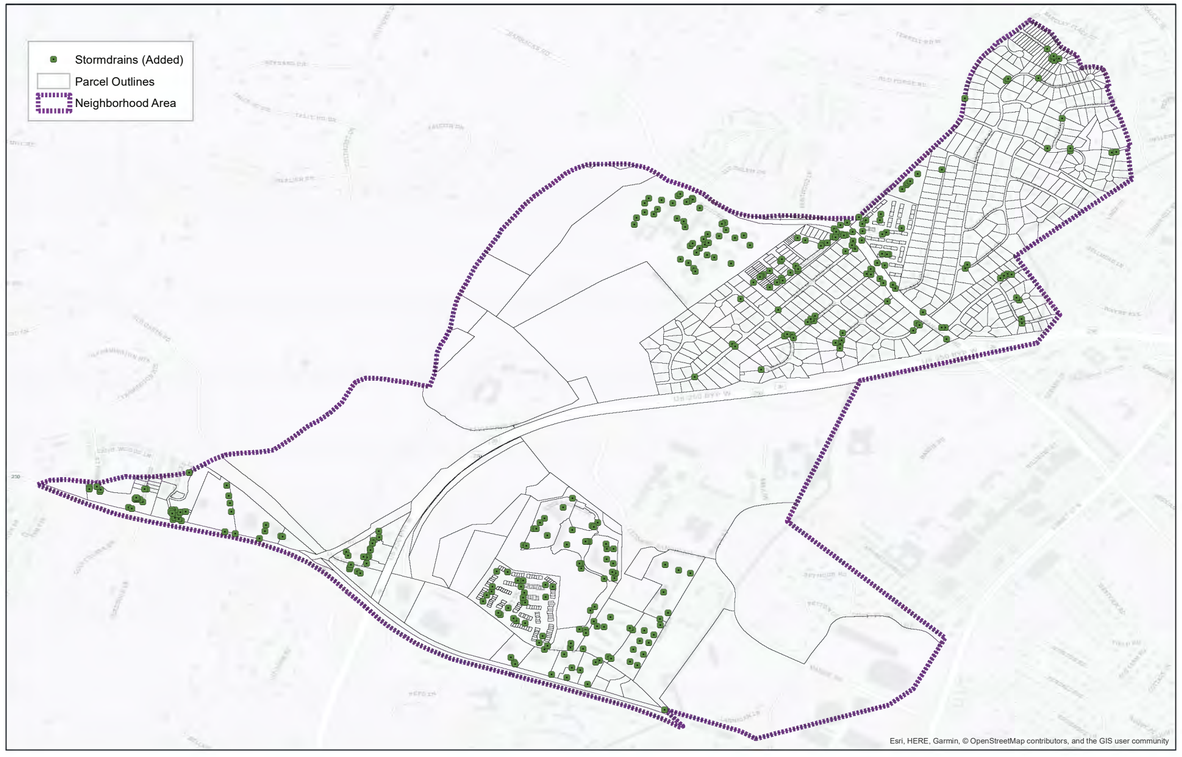
BIKE-PED FACILITIES



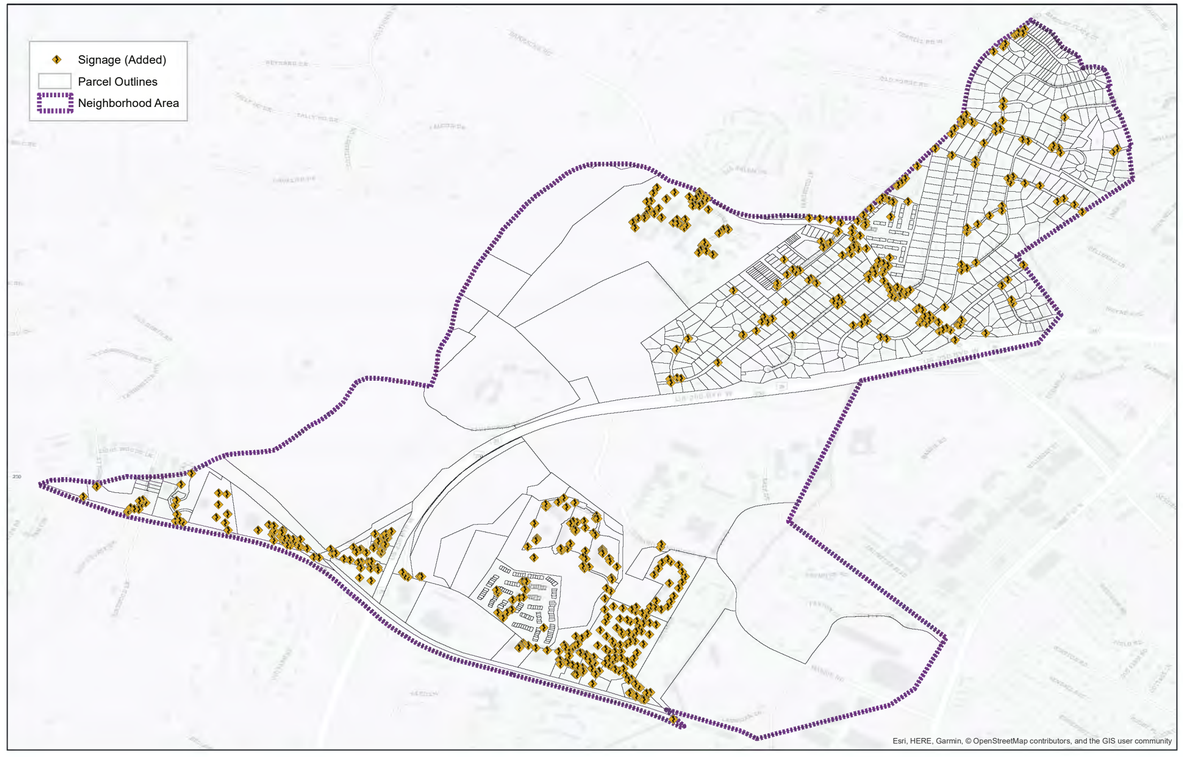
UTILITY AND LIGHT POLES



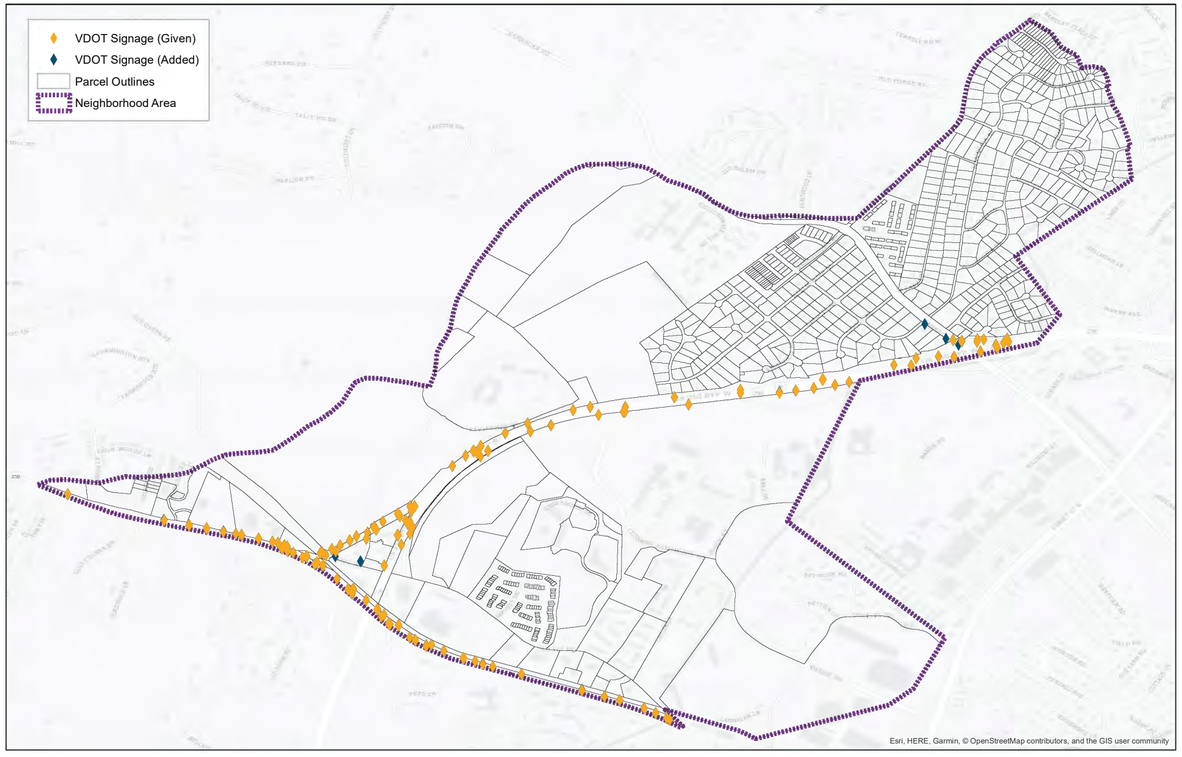
STORM DRAINS



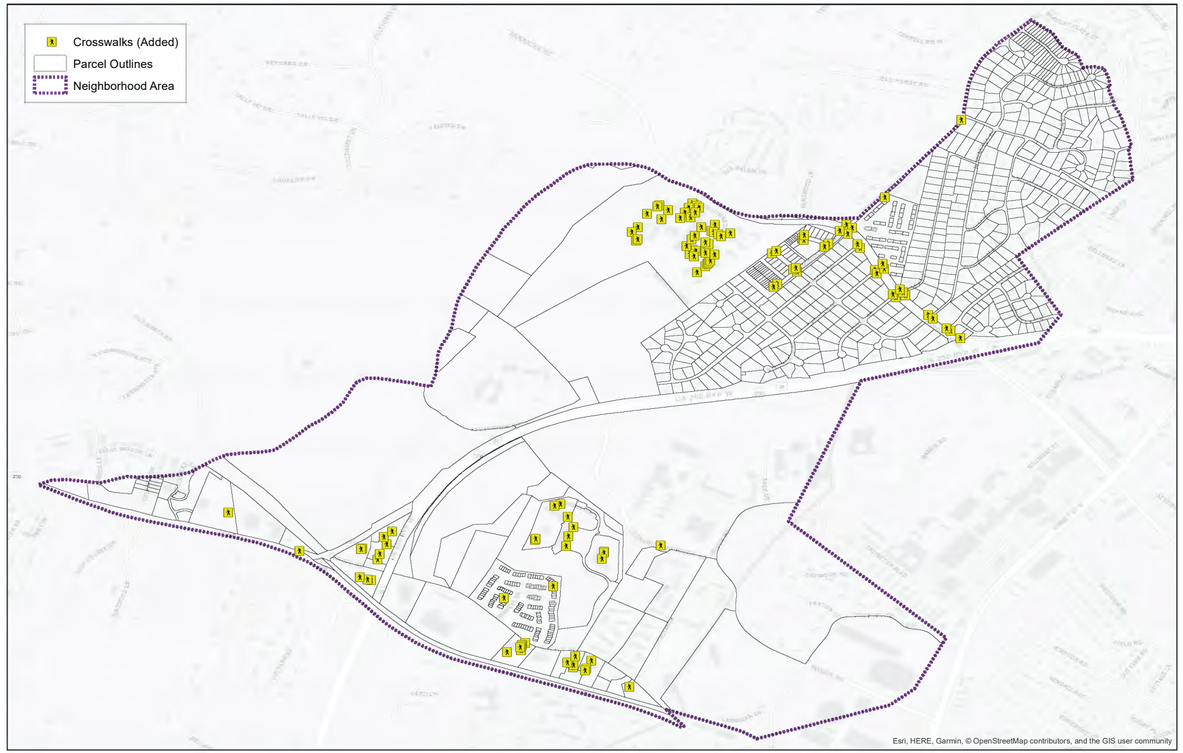
SIGNAGE



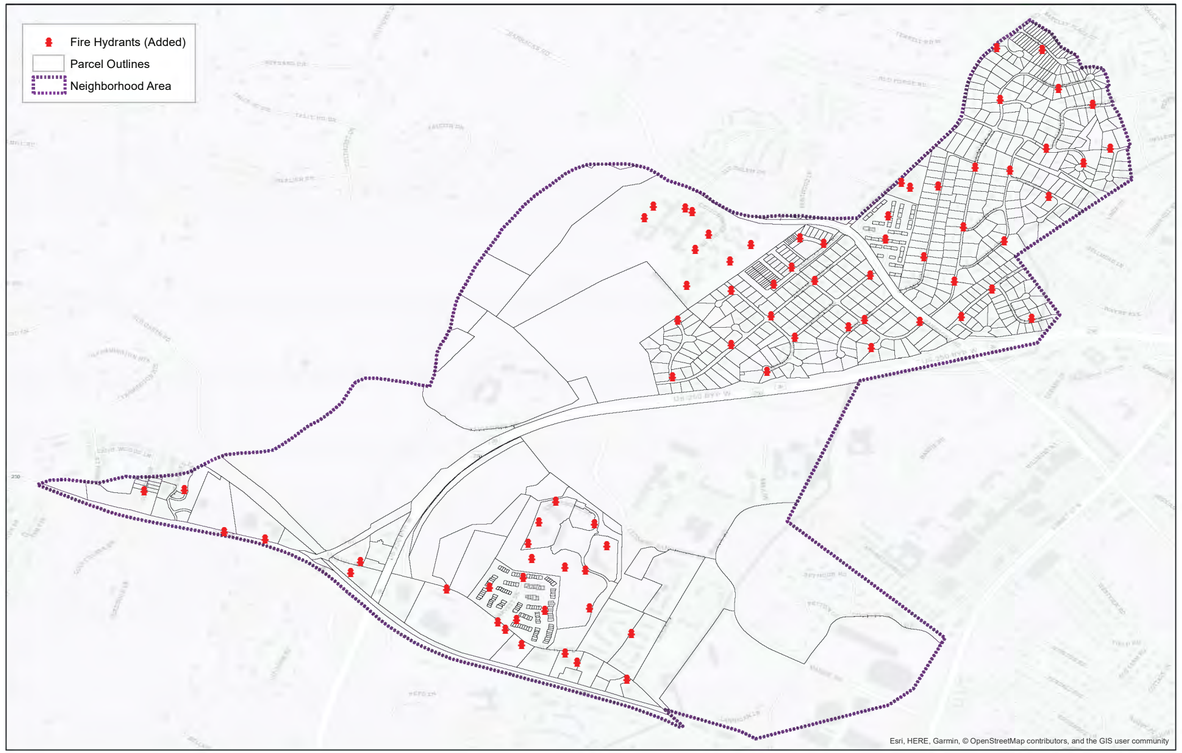
VDOT SIGNAGE



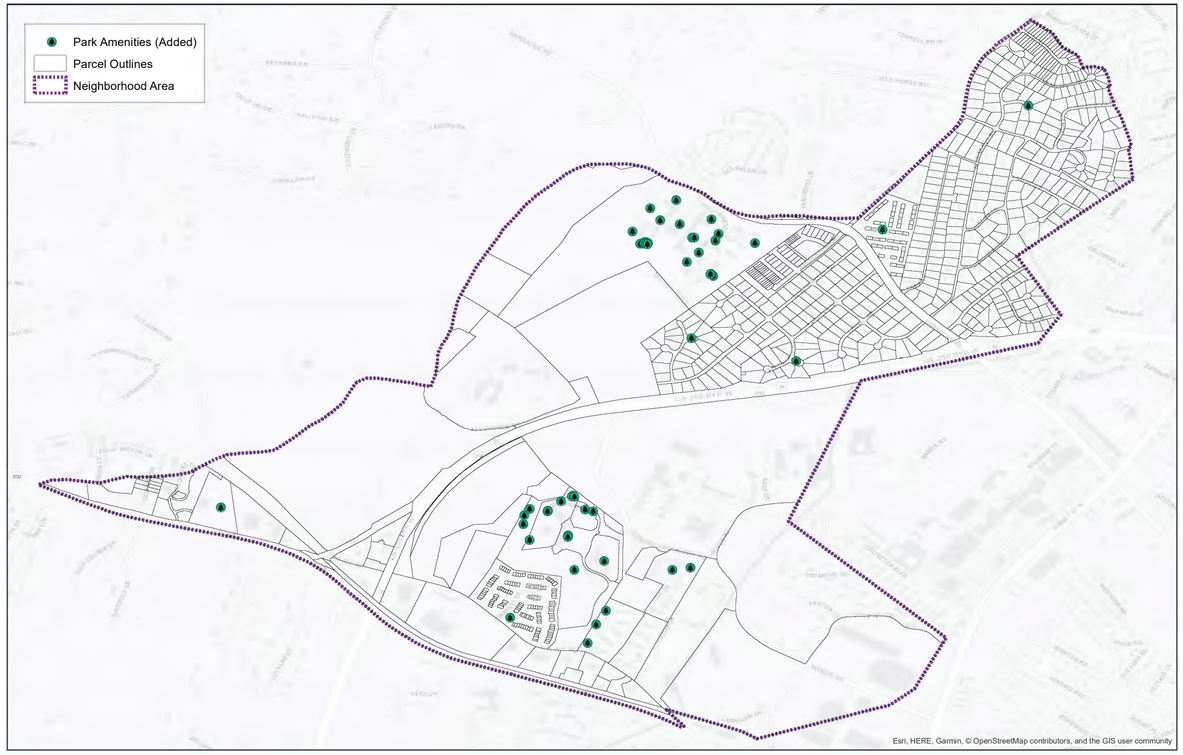
CROSSWALKS



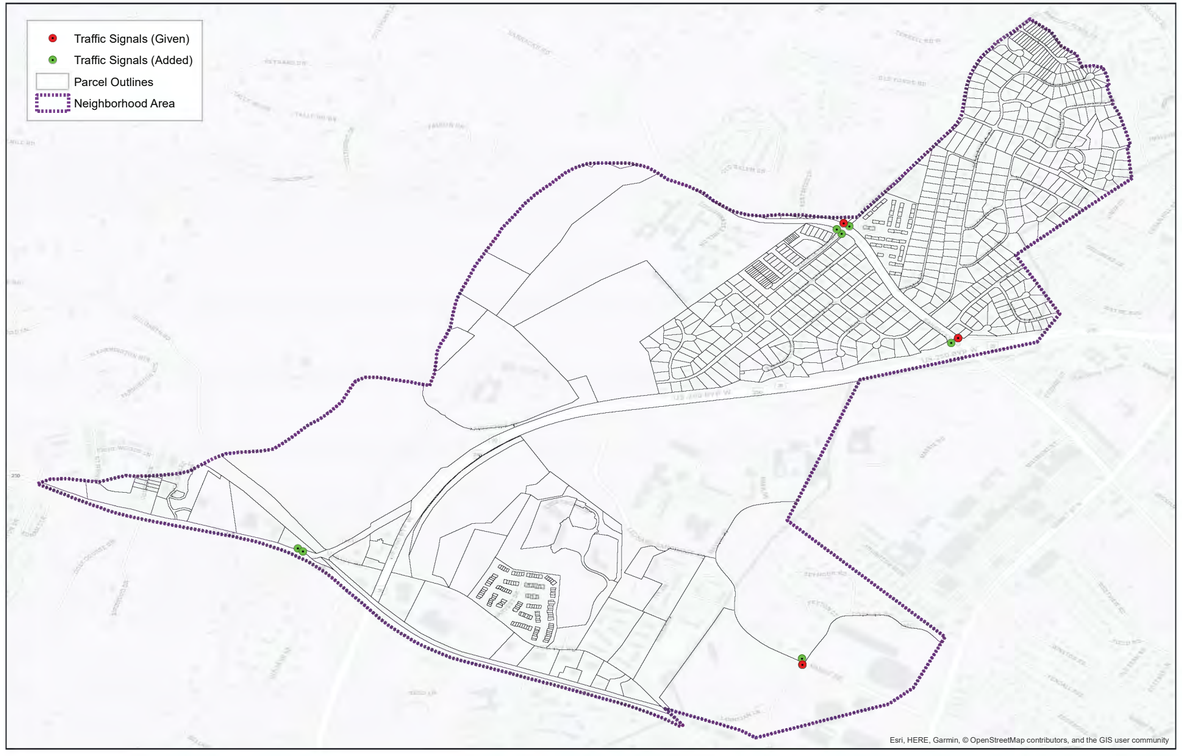
FIRE HYDRANTS



PARK AMENITIES

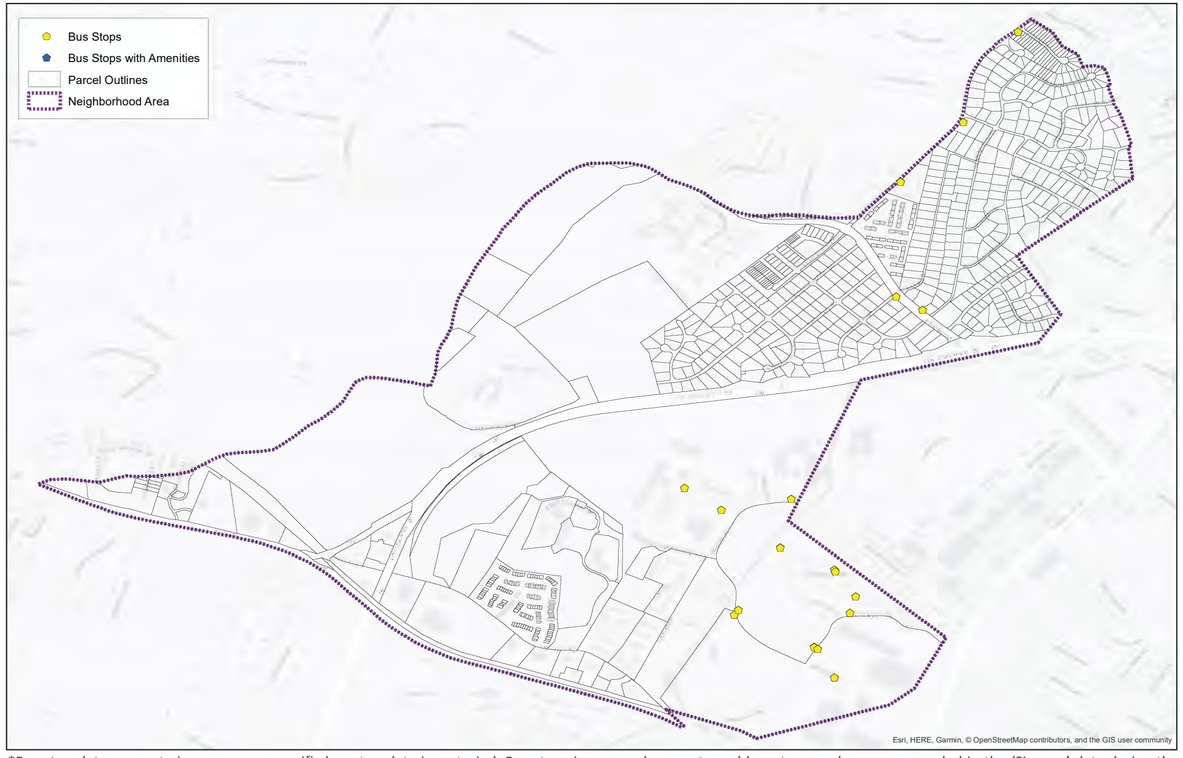


TRAFFIC SIGNALS



multiple

BUS STOPS



*Bus stop data was not given, nor was specific bus stop data inventoried. Bus stop signage such as route and bus stop number were recorded in the 'Signage' data during the inventory. There are five bus stops apart from those on UVA grounds, none of the five bus stops on Barracks Road or Georgetown Road have amenities such as lights, trash cans, benches, or shelters.

HOUSING CONDITION

Staff assigned one of six housing condition categories to defined elements of residential structures in the pilot. While this was a windshield survey, staff focused on providing the most consistent and accurate assessment possible. To ensure the quality of this data, the project manager held frequent meetings with those conducting the fieldwork. In those meetings, staff discussed common challenges, questions, and rationale behind the findings. The project manager also conducted multiple field visits with County staff, to help guarantee consistency. Detailed descriptions of the six categories are included below.

Sound

These are buildings with no visible deficiencies. Most new construction falls under this category, but older structures can as well. These buildings may have some cosmetic flaws, but nothing that diminishes the condition of the home.

Sound with Minor Repairs

These are buildings that are sound but have minor deficiencies. This can include chipping or peeling paint, a handful of loose singles, minor rot around windows or similar issues. These are generally problems that a homeowner can fix themselves or that can be repaired with limited resources from a professional.

Minor to Moderate Repairs

These structures have repairs that require more immediate action and may be beyond the skills of the average person. This may include visible cracks in the walls or siding. The fascia may be rotten or falling off the roof. Multiple shingles may be missing. These buildings are presently sound but identified deficiencies will lead to structural issues if left unresolved.

Moderate to Major Repairs

These buildings appear to have structural weaknesses. This includes interior walls that are exposed to the elements, roofs that need replacing, leaning chimneys or sagging window frames. Only a specialized professional can make these repairs and the work would be costly. Unlike the previous categories, these structures are not sound or will soon be unsafe.

Dilapidated

With major structural degradation, these structures are unsafe and unfit as a housing option for residents. These buildings are likely beyond repair, where demolition is the most cost-effective response. This may also include structures that had a severe fire, where repairs have yet to start.

Under Construction

Staff assigned this designation to any new residential structure that is under construction or existing homes undergoing renovation.

LAND USE CATEGORIES

The second aspect of this project was identifying existing land uses. Staff studied every parcel in the County and used one of 32 categories to describe each. To guarantee consistency and quality, staff conducted the same checks described with the housing conditions work. Details on each of the land use categories are below.

One of the most challenging aspects of assigning housing conditions was the subjective nature of the determination. A house may be constructed poorly or made from inferior materials, but so long as the existing elements are in good condition, staff identified the structure as sound. Other homes had maintenance issues, in terms of overgrown yards or the presence of debris. Staff had to ignore those issues and focus on the conditions of the house. The aesthetics of buildings also provided challenges, where staff had to continually focus on condition rather than the visual appearance of the property. For instance, a large Traditional home could be in the same condition as a small cinderblock home. In other cases, staff may deem the small cinderblock home to be more sound than the Traditional home. Finally, staff also had to take a holistic approach to this work. One house may generally be in poor condition, needing extensive work on several items. Another home could be in great condition, except for a single major deficiency, such as a damaged roof. In some cases, staff may have recorded the same condition for these two buildings. Overall, there were several variables that added complications, which is why staff included the multiple checks and procedures for quality control.

Single-Family Detached

This applies to any situation where there is a single dwelling unit located on a single parcel of land. These units are not physically connected to any other dwellings and the sole use on the property is residential.

Single-Family with Accessory

This applies to any single-family structure that has an additional dwelling that is accessory to the main, primary use. Staff identified these units from County records, along with observations of multiple mailboxes or multiple electric meters.

Single-Family Attached
A single housing unit located on an independent parcel but physically attached to another single-family home on a separate parcel. No more than two units are attached.

Duplex
A residential structure that consists of two housing units on a single parcel. These units are roughly the same size and the building is clearly designed to hold two dwellings, as opposed to a single-family home with an accessory apartment.

Townhome
A single housing unit located on an independent parcel but physically attached to other dwellings on their own separate parcels. Townhomes have more than two attached units.

Condominium
This category includes multiple dwelling units on a single parcel, where each unit has independent ownership. These could take several different forms, with some that resemble townhouses and others large apartment buildings. In most cases, additional research was needed to determine whether a structure was a condo.

Apartment
A multi-family structure on a single parcel, with one owner. Staff included various examples under this category, such as large apartment buildings, single-family structures with three or more mailboxes/electric meters, or dwellings that appear to be townhomes but that are on a single parcel.

Mobile Home
This includes dwelling units that are mobile, such as trailers. It does not include other permanent, prefabricated homes. Almost all mobile homes in the County are in two parks. When assessing the building conditions, staff took the average of all the dwellings in those parks.

Lodging
This includes hotels, motels, beds and breakfasts, hostels or any other uses in which people pay for a room on a temporary basis.

Mixed-Use with Residential
Any parcel that holds multiple uses from this list, including residential. Even if there is only one dwelling unit on the property, it is included under this category. Staff will verify residential units by talking with county staff, referring to county records, looking for names on mailboxes or by finding other signs that provided confident judgment on the presence of residences.

Mixed-Use, Non-Residential
Any parcel that has multiple uses from this list, excluding residential. If one use is overwhelming the primary function of the property, then a mixed-use parcel may not be identified under this category. For example, the Water Street Parking Garage includes office and services, but this parcel is recorded as parking.

Service
Any use that provides a commercial service on-site. This includes gas stations, salons, barber shops, furniture repair, tanning salons, funeral homes, doctor's and dentist's offices, smaller banks and other similar uses.

Office
Buildings dedicated to office uses. The specific businesses in these buildings are less important than the function. For example, staff considers some smaller bank buildings as service, if the majority of their space was dedicated to taking in customers. Staff designates Larger banks buildings as office, because the primary function was office space.

Restaurant
A structure in which the principal use is the preparation and sale of food and beverages. This includes carry-out establishments, fast-food, sit-down and any other type of restaurant. Where gas/service stations prepare and sell food, staff identifies those land uses as service. Groceries that sold prepared food or provided places for indoor seating were recorded as retail. While these uses may contain restaurant activities, it was not their primary use.

Retail Commercial
Structures in which the primary use is the selling of merchandise directly to the individual consumer. This includes establishments that sell groceries, clothing, electronics, pet supplies, home and garden supplies/tools, and other goods. Much of the retail in Charlottesville is located on parcels that have other uses. Consequently, most are included under mixed-use.

Wholesale Commercial
A business that is primarily engaged in selling and/or distributing merchandise to retailers or other professional businesses. Most costumers do not enter the site or do so infrequently, unlike retail commercial. These uses also have a larger office or storage/warehousing component than standard retail.

Manufacturing
A facility used for the creation of new products, done either mechanically or chemically. The process on site includes forming, shaping or altering materials to make these new products. There are very few manufacturing sites in the County, with the best example being a concrete processing site in Belmont.

Warehousing
Any parcel that is dedicated primarily to storage. This may include the storage of trucks and construction equipment, materials, final products, or other items on site. This is similar to wholesale commercial, with the difference being that warehousing might not include items for sale and is overwhelmingly focused on storage.

Park/Public Space

The County's parks and any other legally designated open space. This includes open space created from developments, such as Planned Unit Developments. Staff identified some parcels as vacant, rather than open space, if there were no amenities for public use or official designation.

School

Any primary or secondary school buildings, including public and private. Elementary, middle and high schools fall under this category, along with pre-school, adult education centers, and daycares that are focused on learning.

UVA Use

Any properties that have structures and activities associated with the University of Virginia, except for residential use. Thia includes the UVA hospital, administrative buildings, sports or recreational facilities, classrooms, libraries or other uses that are focused on serving UVA students, faculty and staff.

Institutional

Structures housing non-residential, non-profit operations. This includes government buildings, such as the County Office Building, police stations, post offices, fire departments, public libraries and other similar uses. The institutional use also includes clubs, like the Elks or Freemasons, along with shelters, training centers or similar non-profit activities.

Religious

Uses located in a permanent building, providing regular organized religious worship and related incidental activities. It includes churches, temples, mosques or other religious buildings, regardless of faith or denomination.

Cemetery

Land used or dedicated to the burial of the deceased. In specific cases, staff found a family burial site with a few headstones on private property. Staff did not identify these parcels as cemeteries, so long as there was another, dominate use.

Vacant Building

Non-residential parcels with buildings that are not actively used for any purpose. Staff conducted additional research on several properties when it was unclear whether the building was vacant. That research included sources such as assessment records, County staff or neighbors of the subject property.

Vacant/No Structure

Parcels that lack any buildings and defined uses. In some instances, the owner of a single-family home will also own an adjacent lot that serves as their side yard. Staff identified these as vacant with no structure, even if there was a tool shed or garage present. Any common space or properties intended for public use were recorded as park/public space.

Parking

Parcels primarily containing structured or surface parking. Most non-residential and multi-family uses have parking. If those parking areas were on separate lots, then staff identifies them under this parking category. If they were on the same property as the primary use, then staff recorded it as that primary land use.

Utility

Parcels consisting of any uses that were solely dedicated to utilities. Examples include electrical substations, telecommunications facilities, sewer treatment, or other similar uses.

Transportation

Parcels that are dedicated to transportation infrastructure. Most roadways and some railroads are not located on parcels, thus were not listed in this assessment. There are instances of railroad-owned land adjacent to the tracks, which had associated facilities, storage or buffers. There were other parcels in the median of roadways or that served as part of the streetscape. These were all included under the transportation category.

PEDESTRIAN FACILITIES

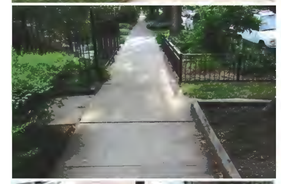
There are four condition categories (Excellent, Good, Fair and Poor) in which facilities will be rated. Accurate and consistent evaluation of the facilities is important to the success of the inventory. As such, staff conducting the fieldwork calibrated their data input daily to ensure that there is consistency between all staff members across the multiple days of fieldwork. Additionally, the staff member regularly meet with the project manager to discuss all aspects of the data collection process, including challenges, observations and rationales on findings.

Excellent

Facilities in this category have no discernible problems or impediments. Furthermore, there is no general wear and tear. Moving forward, the facilities in this category will likely not have to be monitored for potential maintenance issues.

Good

Facilities in this category will have few, if any, problems or impediments. What sets this category apart from the 'Excellent' category is the wear and tear these facilities have endured. While this is usually minor, it does mean that these facilities should be monitored for potential maintenance issues in the issues.



Fair

Facilities in this category, while generally traversable, will have some sections that have impediments. The wear and tear of this category is high. In this category, the facilities are still usable; however, maintenance on these segments should begin to be discussed before the facilities degrade any more.

Poor

Facilities in this category are in serious need of repair. Large parts of these segments will be significantly cracked or missing. These segments should be high in priority for repair and maintenance.

Pothole
This maintenance issue is a large hole in the facility that severely impedes movement at a single spot in the segment.

Obstruction
When an object, like a mailbox or powerline, is in a path of movement for the facility.

Displacement
This impediment occurs when the facility, usually a sidewalk, is displaced by some outside force, like tree roots.

BICYCLE FACILITIES

There are four condition categories (Excellent, Good, Fair and Poor) and the facilities will be rated in a similar manner to those of pedestrian facilities. The major difference in bicycle facility data is the collection of data regarding separation from the roadway and if there is signage designating the trail as a bicycle facility. The same precautions used to maintain accuracy and consistency for pedestrian data were used for bicycle data. The descriptions of the bike facilities conditions and other related data points are located below.

Excellent
Facilities in this category have no discernible problems or impediments. Furthermore, there is no general wear and tear. Moving forward, the facilities in this category will likely not have to be monitored for potential maintenance issues.

Good
Facilities in this category will have few, if any, problems or impediments. What sets this category apart from the 'Excellent' category is the wear and tear these facilities have endured. While this is usually minor, it does mean that these facilities should be monitored for potential maintenance issues in the issues.

Fair
Facilities in this category, while generally traversable, will have some sections that have impediments. The wear and tear of this category is high, usually as it relates to the visibility of the facility. In this category, the facilities are still usable; however, maintenance on these segments should begin to be discussed before the facilities degrade any more.

Poor
Facilities in this category are in serious need of repair. Large parts of these segments will be significantly cracked or missing. These segments should be high in priority for repair and maintenance.

Protected Bike Lane
The bike facility will be considered separate if it is physically separated from road traffic. This can be achieved by either a grade separation or barriers/buffers between the roadway and the bike facility. These facilities can be on or off the roadway.

Sidewalk
A sidewalk is a raised area adjacent to a roadway reserved for the use of pedestrians and or Cyclists.

Bike Lane
A bike lane is an on-road facility reserved for the express use of cyclists. Facilities are marked with painted lines and Bike symbols.

Shared Lane
Is a roadway with shared lane bike markings? These can either be signs or bike specific pavement markings.

Trail
Is primarily a recreational type facility and normally has a unimproved or soft surface. Trails are most often found in recreational facilities.

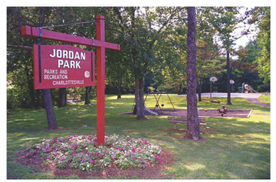
Shared-Use Path
A shared use path is an improved surface facility designed for use by bikes and pedestrians. These facilities can be located adjacent to roadways or in parks and other recreational facilities.

PARKS AND PUBLIC SPACE

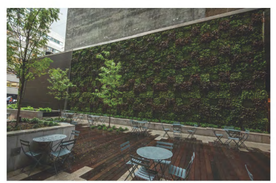
When collecting data on parks and public space, TJPDC staff members primarily focused on the documentation of existing places in this category, not on their condition. The most important data field is the park type, with entries ranging from public plazas to pocket parks. Additionally, there is documentation on if the public space has any recreational or administrative facilities located in it. The space types and kinds of facilities are documented below.

Public Plaza
This public space is dominated by a hardscape layout and primarily urban in nature.

Public Park
A park is a public space that is dominated by vegetation, usually manicured but not always. A park's main use is recreation for the surrounding neighborhoods and can have a large number of additional facilities and service located within, such as playgrounds, sports fields and trails.



Pocket Park
A pocket park is a small-scale park, usually located in an urban setting. While it can be either hardscape or vegetated, this space should emphasize accessibility for nearby neighborhoods. The uses associated with the park won't be as numerous as with a plaza or larger park. Instead the space would just serve as a place where residents can quickly access public space for short periods of time.



Playground
A playground facility provides a place for children to play out in nature. It can include a wide range of play things, from slides and swings to seesaws and monkey bars.

Sports Fields
These facilities allow for amateur or youth sports leagues to play games in the public space. Usually seen as a combination field for sports such as soccer and football, basketball courts and baseball diamonds also fall into this facilities category.

Administrative Space
These facilities house services for the jurisdiction that may be related to the public space, such a Parks and Recreation offices or maintenance buildings.

Meeting Space
This type of facility would provide a formalized meeting space for all types of groups.

ADDITIONAL DATA COLLECTIONS

In addition to the prior, more qualitative sets of data, staff members collected a wide range of miscellaneous data, ranging from street trees to storm drains. The descriptions of these data points can be found below.

Street Trees
This data documented the location of trees located in the public right-of-way. In addition to the tree's location, staff also collected the circumference of the tree at chest height and if it is deciduous or evergreen.

Storm Drains
The staff collected data on the location of storm drains throughout the County. Storm drains can be categorized as Drop inlets, Grates and linear drains.

Street Lights
The staff documented the location of all street-side lights that provide the public right-of-way with illumination.

Utility Poles
Staff collected the location of utility poles along with any identification numbers.

3 LESSONS LEARNED

Data Collection

Nine data points and a window housing condition were inventoried. Traffic signals, VDOT signs, and bicycle and pedestrian data were given to the TJPDC by Albemarle County as existing data. The TJPDC added significant data to the bicycle and pedestrian layer especially within White Gables Condominiums, Kenridge, and University Village Condominiums in the Ivy and Old Ivy Road areas. The Colonnades, Hessian Hills, and University Commons also had significant amounts of bicycle and pedestrian data inventoried. Traffic signals and VDOT signs had minimal additions to the existing data. Crosswalks, fire hydrants, park amenities, stormdrains, utility and light poles, and signage did not have data and was solely collected by the TJPDC.

Within the attribute tables in ArcMap there is a column denoted as 'Notes'. Not all data points will have a note associated with it, for those that do, they are typically additional information that speak to the condition of the data point. For an example, a sign may have a note to denote that it is not visible due to overgrown vegetation. A stormdrain may have a note denoting the condition of the drain has broken bars or is clogged. Some park amenities will have notes to denote what the facility is; if it was recorded as other; and, often will denote ownership of the amenity if on private property, such as an apartment complex pool. Within the crosswalk data layer, it was noted what style of ADA compliance was present, such as a truncated dome, or a pebble surface material. Sometimes a note of "Leads nowhere" was put into the notes because there is only a crosswalk and no other pedestrian facilities such as a sidewalk. Other data points also have notes but are minimal and self explanatory.

The attribute tables for data that was provided by the County and the attribute tables for data added will not always match identically because the data was collected by different offices and had different guidelines for data collected. Specifically, bicycle and pedestrian data given will include shape width and curbs in addition to the data that was added. Other tables will have similar discrepencies.

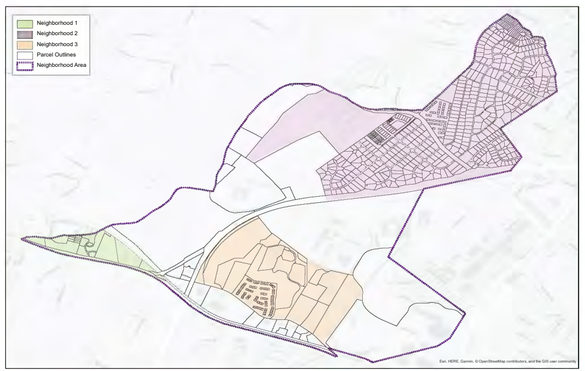
Within the ArcMap file, there are layers labeled as 'Given' and 'Added'. These layers are color coded to showcase the difference and the amount of additional data that was collected in a visual representation.

Typically there were only minor obstacles to collecting the data. The only minor difficulty arose when attempting to determine the number of housing units for a multi-unit structure. This issue arose at Hessian Hills, University Commons, The Colonnades, University Village Condominiums, White Gables Condominiums, and Morningside of Charlottesville. The methodology for determining the number of housing units included:

- Looking for the number of electrical meters, mailboxes, and gas valves on or near the primary building
- Look for another building on the parcel that may contain housing units
- For small apartment buildings count the number of doorways
- Ask a resident or property owner how many units are within the building

Field Observations

These observations are based on qualitative information while in the field and are not intended to be interpreted as fact or used in any way that may misrepresent quantitative data. In the map below there are three highlighted neighborhoods to help orient direction and geographic location while discussing the different areas of the study area.



While observing the housing stock of the study area it appeared that there was no preferred architectural style of home. In fact, there was an abundance of architectural styles present such as: Ranch, Split-Level, Traditional, Cottage, Cape Code, and Dutch Colonial. This list is not intended to be comprehensive of all styles present, but a list of the majority of styles that are present.

The overall condition of homes within the study area were 'Sound', 'Sound Minor', or 'Sound Moderate'. The Canterbury Hills neighborhood was mainly Sound and Sound Minor with five homes listed as Moderate to Major. While this neighborhood has a significant amount of homes labeled as Sound Moderate, the vast majority of those homes are listed as such due to what appear to be aging roofs. All housing stock were inventoried and rated for condition by one planner from the TJPDC except for the neighborhood North of Barracks Road and East of Georgetown Road. The neighborhood(s) that were not inventoried by the planner for the TJPDC were inventoried by two interns with the TJPDC. Due to the inconsistency of whom was conducting the inventory and housing condition, it is likely the planner was more thorough and detail oriented than the interns when rating the condition of homes and can be cause for seeing more Sound Minor and Sound Moderate homes in the Canterbury Hills neighborhood in comparison to those conducted by the interns. White Gables Condominiums and the new/partially under construction Out of Bounds and Kenridge subdivisions were rated as Sound.

White Gables Condominiums, Out of Bounds, and Kenridge appear to be affluent neighborhoods with new construction. Canterbury Hills is an older construction neighborhood, with middle age and empty nesters acting as long-time residents. There are also new young couples and families moving into the neighborhood. The combination of wealthier middle age, empty nesters, and financially stable young couples has afforded these residents equity in their homes and allows the neighborhood to have updated homes and well maintained landscapes.

The neighborhood North of Barracks Road and East of Georgetown Road appears to have a more diverse racial and economic spectrum. From an appearance and housing condition rating, Frederick Circle, Middlesex Drive, King George Circle, and University Commons appear to be the most impoverished. While Frederick Circle, Middlesex Drive, and King George Circle have mostly Sound, Sound Minor, and Sound Moderate rated homes, the properties are not as well maintained as other areas of the neighborhood. University Commons, rated as Moderate to Major, does have an abundance of maintenance to complete and also has a less than enticing curb appeal and landscape, including a crumbling infrastructure from sidewalks to the parking lot. The remainder of the neighborhood is mainly Sound and Sound Minor with only two Sound Moderate homes and three Moderate to Major rated homes.

While curb appeal and landscape were not taken into account when rating a home's condition it can be noted on an individual homes notes that the landscape was substantially overgrown, had debris (other than natural such as tree limbs etc.), or was neglected. The majority of homes throughout the study area had fair to good curb appeal and landscaping. The Canterbury Hills neighborhood had good to above average curb appeal and landscaping and Out of Bounds, White Gables Condominiums, and Kenridge had excellent curb appeal and landscaping.

The study area was void of any public parks or public spaces. Therefore, some neighborhoods took it upon themselves to address the lack of greenspace. Specifically, Canterbury Hills has created pocket parks on cul-de-sac islands. These pocket parks have been planted with trees, shrubbery, and flowers and also include seating areas. Newer housing developments such as Out of Bounds and White Gables Condominiums have shared open spaces within their developments. Kenridge is a new development but a shared open space was not observed. The Colonnades and University Village Condominiums, which specialize in elderly living, also have shared open space which include game boards and outdoor activity space.

Trails exist internally on The Colonnades and University Village Condominiums parcels. These trails were not identified within the existing GIS data set. It is beneficial for the county to share this data with the City of Charlottesville and other trail advocacy groups, especially the Rivanna Trails Foundation. The region is working diligently on a connected trail

system and it can be beneficial to connect these segregated trails. It would also be advised that these trails not remain segregated from the public but connect to neighboring sites and other neighborhoods. An example is the Out of Bounds neighborhood that is adjacent to the Colonnades. The Colonnades and Out of Bounds are separated by a small fence and a private trail follows the fence on the Colonnades Property.

In the Field

The timing of the field work was ideal in terms of weather. Much of the field work was conducted in the month of June when temperatures were typically in the 80's and rain was not too much of an obstacle. Field work was slowed due to weather conditions throughout the entirety of the project but was not detrimental to completion. While this inventory did not look at street trees (there were none within the project boundary), a future inventory may look to do so. When planning for a future inventory, we will need to consider the timing of the inventory so those in the field can see the health of the trees. The ideal time would be Spring, May-June, or Fall September-October or depending on temperatures and leaf loss, November. It can be completed in the Summer months of July-August but some trees may begin to exhibit heat stress or drought stress conditions. The Winter months of November-February are not feasible as they will not have foliage and the trees will be dormant. Early Spring poses other challenges such as trees emerging from dormancy at different times depending on temperature and often times unpredictable weather.

To conduct these inventories the TJPDC is using tablets. We must not only think of funding schedules, personnel schedules, weather, and personnel safety (extreme cold and heat, snow and rain storms etc.) but also of what conditions work best for electronics. As we approached warmer days nearing or above 90 degrees in June, the tablet overheated multiple times within just minutes of being in the sun. This often times led to major delays in the day. Electronics are not only susceptible to extreme heat but also to extreme cold. This is yet another reason why the Winter and early Spring would be extremely difficult to conduct such an inventory. The Summer months of July-August would not be ideal for electronics but should not be entirely written off without further discussion.

The use of tablets is vital to the success of this project. Integrating the tablet and ArcGIS Online was extremely successful in completing this inventory. However, moving forward the TJPDC will need to invest in additional and better equipment to ensure inventories are completed on-time and with as little technical issues as possible. The TJPDC currently has two tablets, the smaller of the two tablets did not operate very well in the field as it lagged for several minutes to upload photos. Therefore, a residential complex that could be completed in a few hours' time with the larger tablet would take a minimum of three times as much time if not more. The TJPDC office shares its tablets with all other employees and the larger tablet at times was not available for field work. It is ideal to have more than one fully functionable tablet in case another employee specifically needs to use one of the tablets (in which case only one of the tablets has a certain program), there is more than one person in the field, or if the tablet needs to be recharged. Having at least a second tablet available that is fully functioning will be the minimum needed moving forward.

ArcGIS Online allowed the field work to be completed accurately, diligently, and detailed. Using the online tool was fairly simple but often times required too much involvement which slowed down the process. For example, when entering data on a sign, our system has five categories: Type, Condition, Notes, Route Number, Size. Within the Type category there is a drop down menu of pre-loaded sign types. In future inventory collections we should expand this selection. Size of the sign can be eliminated as it was never input due to a lack of a good option to measure or know the size of signs without adding extreme delays (this data also seems to be much less useful than other collected data). The notes section was the most time consuming portion of all data collected, especially for signage. Moving forward, it will be vital to create additional drop down menus within notes of the most common comments. This will drastically speed up the amount of time a person(s) spend in the field and may lead to even greater detail being recorded. Other data collection features also need to be greatly refined to streamline the process. These issues will be taken care of within the TJPDC when updating the system for any future inventories.

This project initially began with the field work being compiled by two interns and was then taken over by a full-time planner. It is the TJPDC's responsibility to observe and ensure the work being compiled in the field is of the highest quality. Moving forward the TJPDC will need to have regular check-in's with field workers if interns are used in this process again. These check-in's will need to be lengthy at times in the beginning to ensure that all data is being captured, the data is accurate, and housing conditions are followed through with detail. It may also be advisable that a planner accompany an intern to show them precisely how the process works, the level of expectations, and the attention to detail that is needed in such a project.

Moving Forward

A clear understanding of what is to be inventoried and most importantly to what level of detail is vital to ensuring the County receives the data to the level of detail expected and the TJPDC is not collecting too much data that is not useful, therefore adding additional time and expenses to the project. The primary data that the TJPDC and Albemarle County will need to further refine is signage. The TJPDC inventoried all signage within the study area, including VDOT signs, private business signs, address plaques, information signs, and warning signs. It is understood that VDOT signs, warning signs such as pedestrian crossing ahead and low bridge clearance signs will typically always be identified. However, the question comes in when the level of detail becomes so great that informational signs on private property, such as businesses, is identified. Some examples of the types of signs inventoried in this category are: addresses, company names, parking area for tenants and guests only, building number, FDC, and no trespassing. Inventorying the additional signs can add a substantial amount of time to the project for potentially little gain to the County. For this reason, it will be imperative that the TJPDC and County communicate with very clear intentions moving forward to determine what types and level of detail is wanted and needed.

Determining a feasible time frame for an inventory of each area will depend on multiple facets. The pilot area was mainly residential except for areas of Old Ivy Road and Ivy Road. This allowed those in the field to park in the morning and leave the vehicle for several hours because there was a good connectivity network within the neighborhood. When working in the Ivy and Old Ivy area, an area much smaller than Canterbury Hills, Georgetown Road and Barracks Road, the time to inventory this area was nearly the same amount of time because connectivity was much more difficult and required multiple moves per day. The study area also included major land area owned by The University of Virginia, of which the TJPDC did not inventory. Moving forward, it is important to understand the amount of time it took to perform the field work in the pilot area and use it as a basis for expectations on other areas. Some areas may take substantially more time because the density of data is higher, pedestrian connectivity is poor, or even the condition of the terrain (steep hills).