



HENDERSONVILLE PLANNING COMMISSION

AGENDA

Main Meeting Room

Tuesday, January 6th 2026

6:30 PM

1. OPENING PRAYER

2. ROLL CALL

3. PUBLIC COMMENT (AGENDA ITEMS ONLY)

4. ACCEPTANCE OF AGENDA

5. MINUTES:

Minutes of December 2nd, 2025

6. CONSENT AGENDA

SP-006994-2025: Offices for Rock Castle Wealth Management – Site Plan

Owner: RBWF Properties

Location: 119 Maple Row Boulevard, Parcel 1590 D 017.00

Lead Planning Staff: Timothy Whitten

7. DEVELOPMENT PLANS:

DP-006913-2025: TBN (Millenia Cottages) – FDP

Owner: Trilogy Asset Investments Inc.

Location: 645 E Main Street, Parcel 158A A 008

Lead Planning Staff: Timothy Whitten/Zachary Coleman

(Deferral from November 4th & December 2nd HPC Meeting)

8. SITE PLAN

- SP-006994-2025: 1 Twenty at Sanders Ferry – Site Plan
Owner: Stephen Pinaire
Location: 120 Sanders Ferry Rd, Parcel 160M C 017.00
Lead Planning Staff: Timothy Whitten
(Waiver Request)
- SP-007014-2025: Heritage Park – Site Plan
Owner: City of Hendersonville
Location: 119 East Drive, Parcel 164 F 001.00
Lead Planning Staff: Timothy Whitten
(Waiver Request)
- SP-006994-2025: Nashville Tempered Glass Warehouse – Site Plan
Owner: Grants Fireworks Property Management
Location: 100 Jessica Lauren Ct, Parcel 146 100.00
Lead Planning Staff: Caitlin Shinn
(Waiver Request)

9. OTHER

- SUB-006966-2025: Mansker Farms Phase 18 Section 1 Setback Deviation – Final Plat
Owner: Wilson Bank & Trust
Location: 124 Manor Way, Parcel 1144I N 020.00
Lead Planning Staff: Caitlin Shinn
(Deferral from December 2nd HPC Meeting)

Development Impact Fees: City of Hendersonville
Lead Planning Staff: Keith Free/ Zachary Coleman

Election of Officers

10. STAFF-LEVEL PROJECTS, APPROVED:

- SUB-007027-2025: Rock Castle Wealth Management Offices– 3-Page Plat Amendment
(119 Maple Row Boulevard)

11. STAFF-LEVEL PROJECTS, PENDING:

SUB-006988-2025: C.L Powell – Final Plat

(134 Powell Dr)

S - 11/13/25

Lead Planning Staff: Caitlin Shinn

SP-007029-2025: First Presbyterian Church Pavilion

(172 West Main St)

A - 12/18/25

Lead Planning Staff: Timothy Whitten

SUB-006708-2025: Meadows of Indian Lake Ph 4 Sec 3 Lots 248 & 249 Consolidation –

Final Plat

(344 & 342 Raintree Dr)

A - 12/18/25

Lead Planning Staff: Caitlin Shinn

SUB-006891-2025: Molly Walton Industrial – Final Plat

(157 Molly Walton Dr)

A - 12/18/25

Lead Planning Staff: Timothy Whitten

SP-007030-2025: Stonecrest Ph 5, Sec 2 & 3 Elevation Amendment

(1351 Saundersville Road)

A - 12/18/25

Lead Planning Staff: Caitlin Shinn

12. PLANNING DIRECTOR COMMENTS:

2025 Year End Report

13. ADJOURNMENT

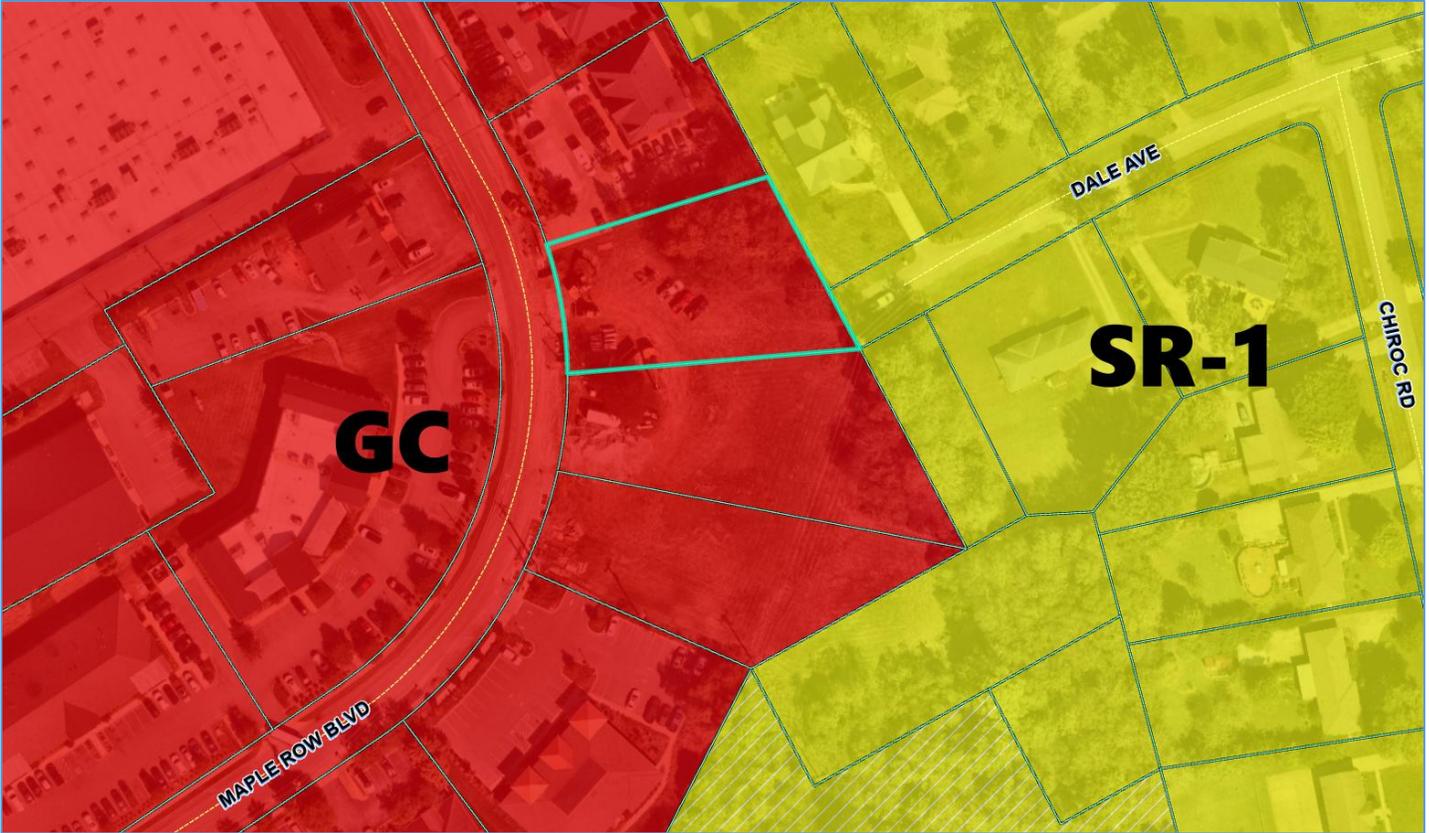
AGENDA DATE:	January 6 th , 2025
HPC PROJECT #:	SP-006994-2025
PROJECT NAME:	Offices for Rock Castle Wealth Management
PROJECT TYPE:	Site Plan
PROJECT LOCATION:	119 Maple Row Boulevard, Parcel 1590 D 017.00
WARD:	Ward 2

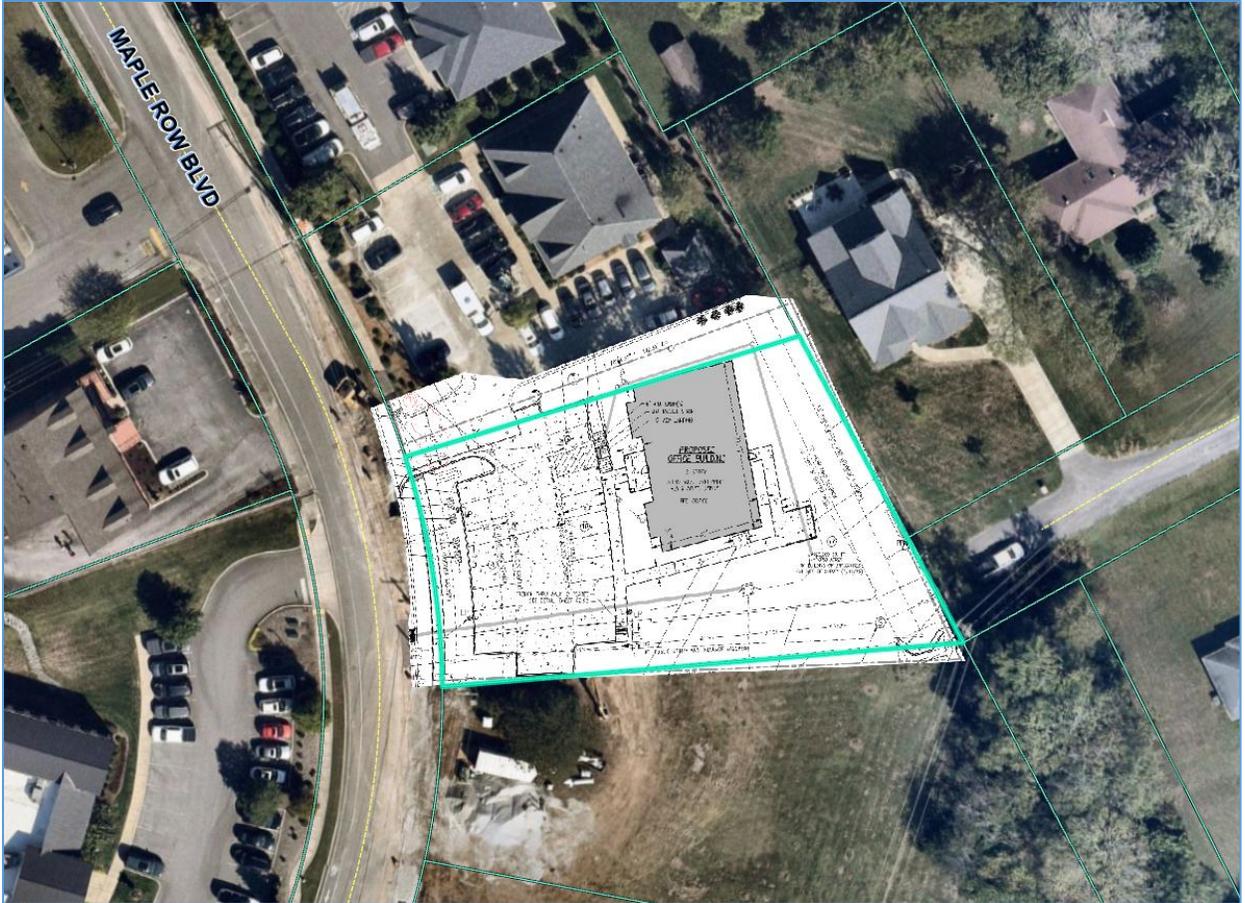


STAFF REPORT: 1

This is a 0.58 acre vacant lot located at 119 Maple Row Boulevard, adjacent to and south of Cornerstone Primary Healthcare. It is zoned General Commercial (GC). GC zoning is to the north, west and south. SR-1 zoning is to the east.

The proposed use is a 4,818sf office building. 12 parking spaces are required and 18 are proposed. A type B landscape buffer is being provided along the SR-1 zone line. Access to the site will be via an existing joint-access with Cornerstone Primary Healthcare. Cross-access will be provided to the future development to the south.





FRONT ELEVATION FACING MAPLE ROW BLVD



REAR ELEVATION FACING EAST

STAFF COMMENTS – PLANNING DEPARTMENT:

2

comments:

1. Provide NES-approved electric service plan prior to building permit application.
2. Show underground electric service to building.
3. Cross-access easement must be recorded prior to building permit issuance.

Submitted by Timothy Whitten, RLA, AICP, Assistant Planning Director (December 17th, 2025)

STAFF COMMENTS – PUBLIC WORKS:

3

1. All comments have been resolved.

Submitted by Stephen Winzenread, PE, Assistant Public Works Director/City Engineer (December 17th, 2025)

STAFF COMMENTS – FIRE DEPARTMENT:

4

1. No Comments

Submitted by Chris Willyard, Deputy Fire Marshal (December 17th, 2025)

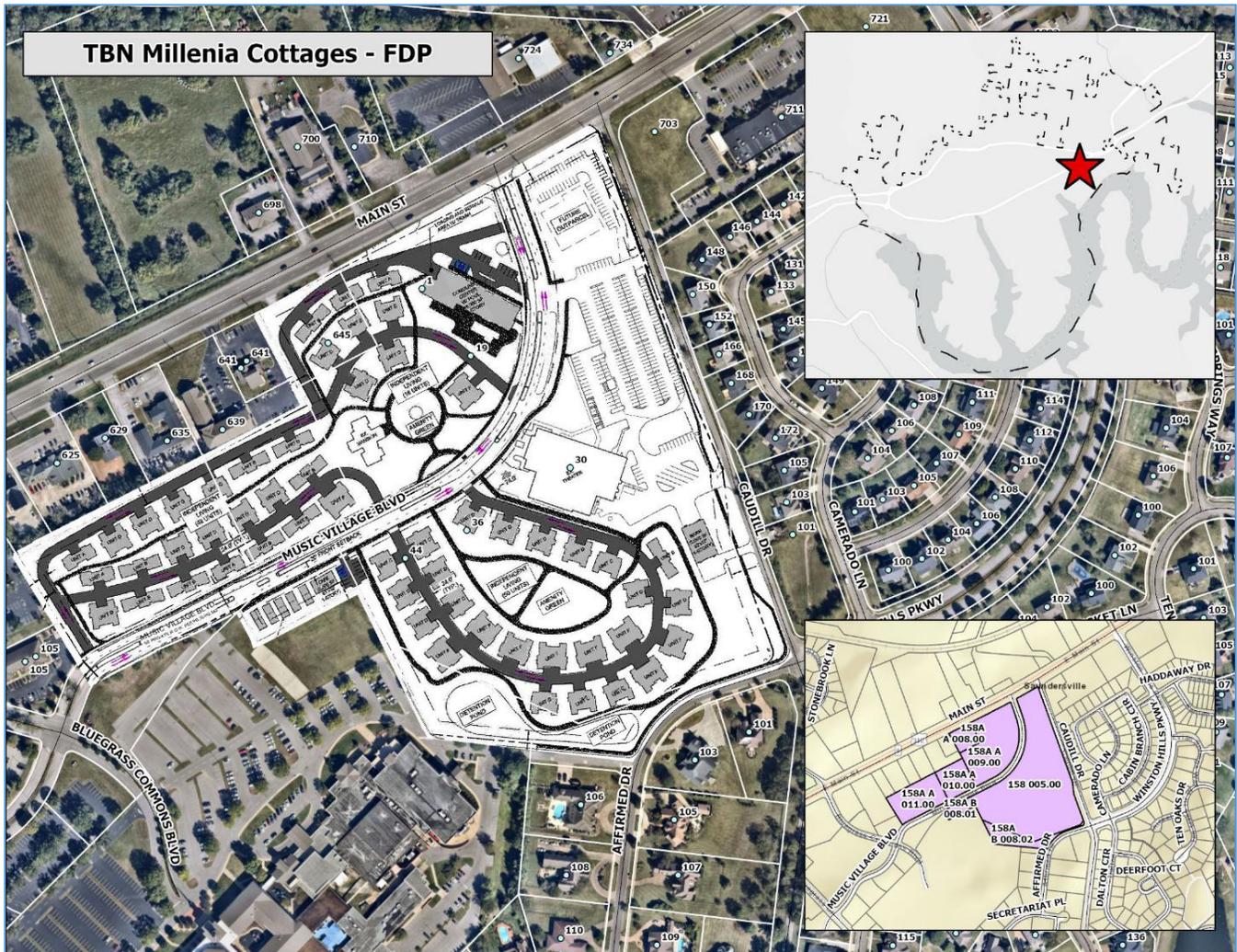
STAFF COMMENTS – UTILITY DISTRICT:

5

1. See note on sheet C1.05.

Submitted by David Brigance, HUD Construction Supervisor (December 17th, 2025)

AGENDA DATE:	January 6 th , 2026
HPC PROJECT #:	DP-006913-2025
PROJECT NAME:	TBN (Millenia Cottages)
PROJECT TYPE:	Final Development Plan
PROJECT LOCATION:	645 E Main Street, Parcel 158A A 008
WARD:	Ward 5



UPDATE TO STAFF REPORT & COMMENTS:

- *At its November 4th meeting, the HPC voted to defer TBN Music City to allow the developer to go back and add parking for the Independent Living cottages. The plan has been revised to meet all parking requirements. This has been done by adding one surface parking space per cottage unit (or two additional spaces per structure). **The applicant is no longer requesting a waiver of any parking requirements.** The plan has also been revised to address previous staff comments. One other minor change that has been made since the last HPC meeting is that one of the cottages that fronted on Music Village Boulevard has been relocated to the first row of units on the north side of the property. The total number of units remains unchanged.*

- *Since the definition of Independent Living was a topic of discussion at the last meeting, the full definition from the zoning ordinance has been provided below:*

INDEPENDENT LIVING FACILITY

A residential complex containing dwellings where the occupancy is limited to person who are 55 years of age or older or, if two persons occupy a unit, at least one shall be 55 years or older. Such facilities may include common areas for meals and socializing, offer minimal convenience services, but exclude institutional care such as medical or nursing care. An Independent Living Facility shall not include Assisted Living Facility, Community Residence, Nursing Home, or Home for the Aged.

- *The following staff comments have been added to this revised plan:
All proposed sidewalks are to be constructed in conjunction with the first phase (i.e. the cottages). A three foot grass strip is required between each pair of cottage parking spaces.*



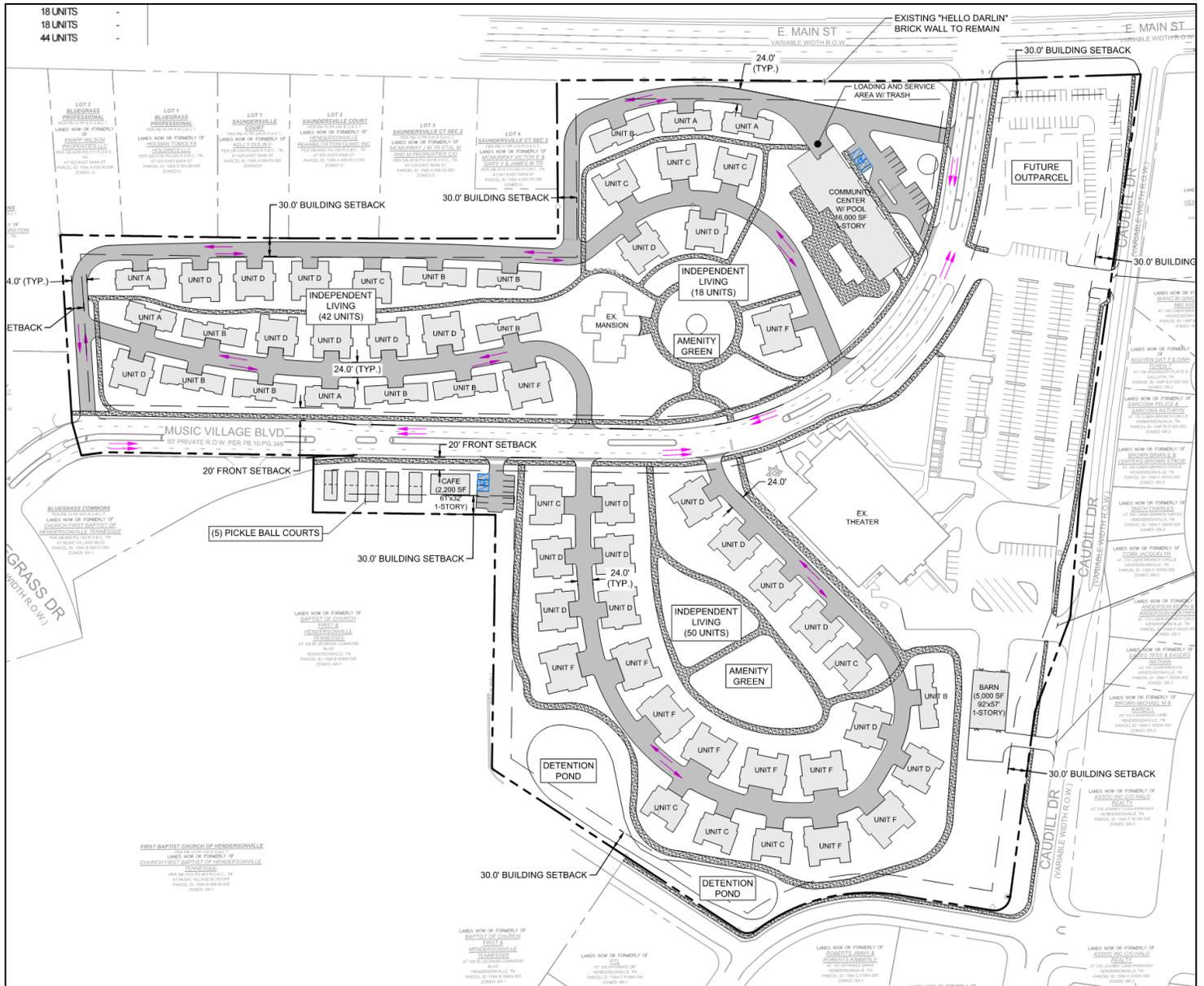
THE UPDATED FDP

STAFF REPORT: 1

The Preliminary Development Plan for TBN Music City went before the Planning Commission in January of 2024 and received a negative recommendation to the Board of Mayor & Aldermen. BOMA then approved the PDP (see image below) following the applicant’s commitment to retain and refurbish the Twitty Mansion. The BOMA plan reduced the number of Independent Living cottages from 96 to 90 due to keeping the Twitty Mansion, and showed retention of the brick wall and entrance along East Main Street.



PDP APPROVED BY BOMA



PROPOSED FDP

Now, TBN is moving forward with a request to approve the Final Development Plan (FDP). The PDP that was approved by BOMA proposed 90 Independent Living cottages, 80 Assisted Living units, a clubhouse and pool, a chapel, 39,300sf of Office and supporting retail, and retention of the existing theater, barn, and Twitty Mansion. The proposed FDP removes the Assisted Living facility with its 80 units and expands the Independent Living cottages from 90 to 110 units. Unit density for the cottages is reduced from 5.82 units/ac. to 4.94 units/ac (15 units/ac is the maximum allowed by the zoning ordinance). It retains the Twitty Mansion (now fully renovated) and the theater, but shows the existing barn to be replaced with a new barn/storage facility. The two office outparcels that were proposed on either side of the Main Street entrance have been reduced to one outparcel to the east of the

entrance, for a total of 12,650sf vs the previous 39,300sf. Ingress/egress points on Main Street have been reduced from two to one. Ingress/egress points on Caudill have been increased from 2 to 3. Overall, the revised layout is similar to the PDP, but presents a very different appearance to East Main. Instead of having a large assisted living facility and two office buildings facing Main Street, now the cottages will take the place of all but one of the office buildings and will back up to Main Street and the existing brick wall.

Parking requirements for the Independent Living cottages is 2 spaces per unit, plus one per employee. The zoning ordinance states that garages are not allowed to count towards required parking. TBN is requesting a waiver to allow garages to count towards required parking. The current layout provides one space in the driveway and one in the garage for units types A through E. Unit type F meets the required parking since it has two spaces in each driveway. See the attached waiver request letter from the applicant.

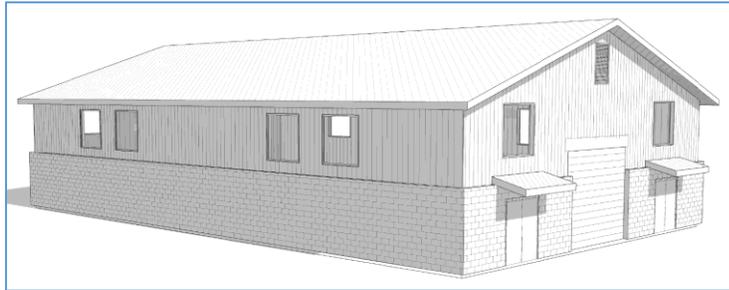
Exterior building elevations of the proposed cottages, clubhouse and barn have been provided. The siding material on the cottage unit types is not defined. Per images that were included with the PDP, staff is requiring that the applicant work with staff through the site plan process to provide a sizeable percentage of brick/stone on each unit and otherwise increase the design quality to be more equivalent to those initial images (see Planning staff comment #5). The clubhouse



PROPOSED COTTAGES



PROPOSED CLUBHOUSE



PROPOSED STORAGE BARN

ESTIMATED NEXT STEPS IN THIS FINAL DEVELOPMENT PLAN APPROVAL PROCESS:

1. BOMA General Committee Meeting (Dec. 9, 2025, estimated)
 2. BOMA Regular Meeting (Jan. 13, 2025, estimated)
-

STAFF COMMENTS – PLANNING DEPARTMENT:

2

1. In the applicant response to staff comments, it is stated that there are no improvements proposed to the existing parking lot north-east of the theater and that therefore no landscaping improvements should be required to it until such time that changes are made. However, the plans show the existing parking lot to be completely reconfigured on multiple sheets. Please resolve the conflict.
2. A 20' Type B buffer is shown along the edge of the parking lot that is north-east of the existing theater. If the existing parking lot is to be retained, the full 20' width may not be able to be obtained without removing some of the pavement width.
3. Amend the Proposed Uses chart as follows to bring it into compliance with the chart approved with the PDP:
 - “General Business” should be “General Business Services”
 - Add “Restaurant Quick Service (limited to coffee shop)”
4. Sheet L1.0 does not show the proposed office outlot as shown on the other sheets – revise.

5. The provided cottage elevations do not match the level of design and quality of materials shown with the PDP. The PDP illustrations showed units with deep porches and eaves, a mixture of brick, stone and fiber cement board, and other architectural features. While the proposed cottages do not have to match the illustrations, the overall quality of design and materials should be at least equivalent. Work with staff through the site plan stage to refine the elevations and bring them more into alignment with what is shown with the PDP.
6. Proposed materials on the barn elevations are not called out, but appear to resemble CMU block. CMU is not a permitted material. Work with staff to meet and exceed City building design requirements
7. Since the cottages are now proposed to back up to East Main Street, preserve all of the existing brick wall to help serve as a screen from the street. In addition, provide evergreen screening between the wall and the units.
8. The chart on sheet C2-00 lists unit types A through D, but the layout plan and elevations show units E and F. Update the chart to reflect counts for all unit types.

Submitted by Timothy Whitten, RLA, AICP, Assistant Planning Director (December 17th, 2025)

STAFF COMMENTS – PUBLIC WORKS:

3

1. No Comments

Submitted by Stephen Winzenread, PE, Assistant Public Works Director/City Engineer (December 17th, 2025)

STAFF COMMENTS – FIRE DEPARTMENT:

4

1. No Comment.

Submitted by Chris Willyard, Deputy Fire Marshal (December 17th, 2025)

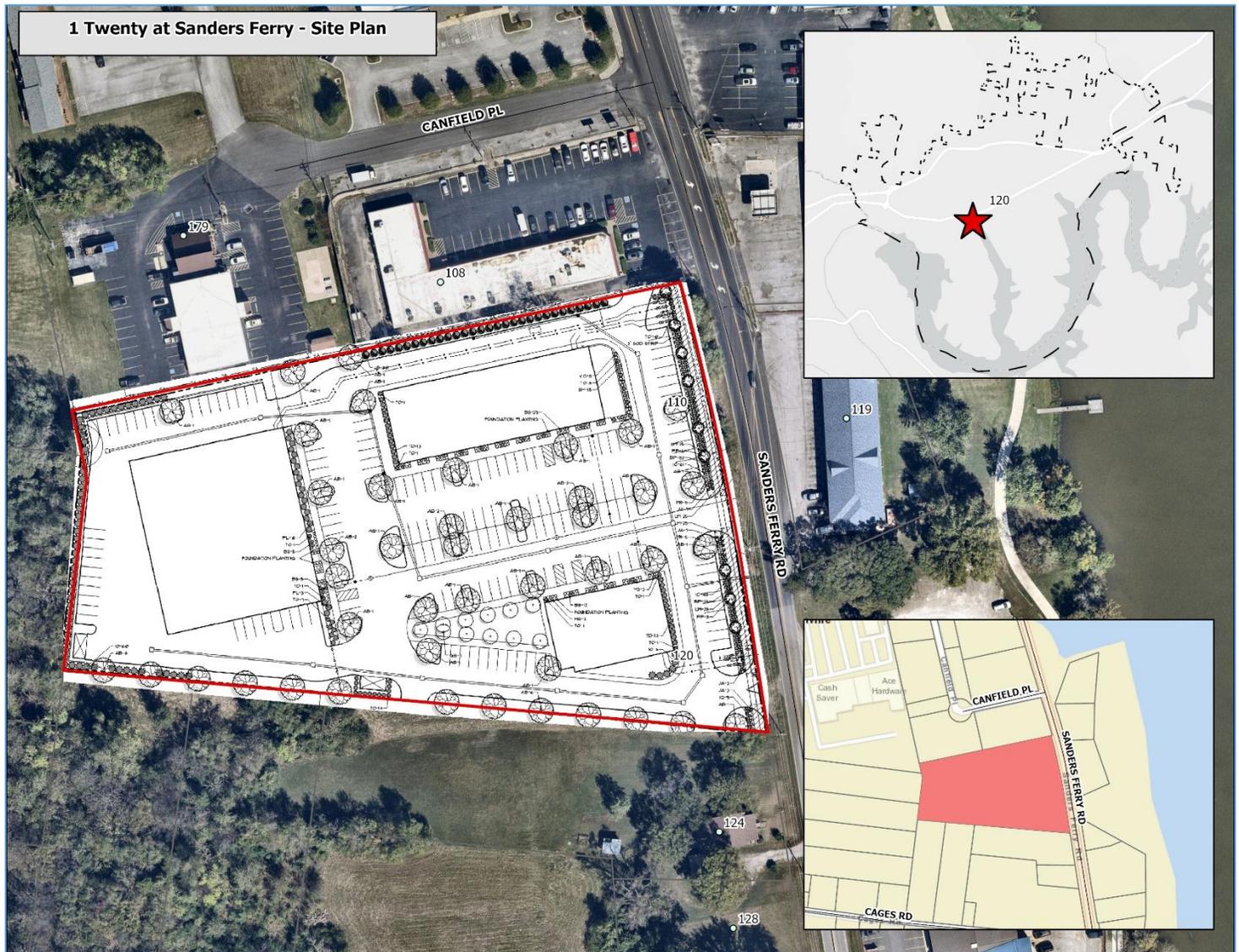
STAFF COMMENTS – UTILITY DISTRICT:

5

1. No Comments

Submitted by David Brigance, HUD Construction Supervisor (December 17th, 2025)

AGENDA DATE:	January 6 th , 2025
HPC PROJECT #:	SP-006992-2025
PROJECT NAME:	1 Twenty at Sanders Ferry
PROJECT TYPE:	Site Plan
PROJECT LOCATION:	120 Sanders Ferry Rd, Parcel 160M C 017.00
WARD:	Ward 2



STAFF REPORT: 1

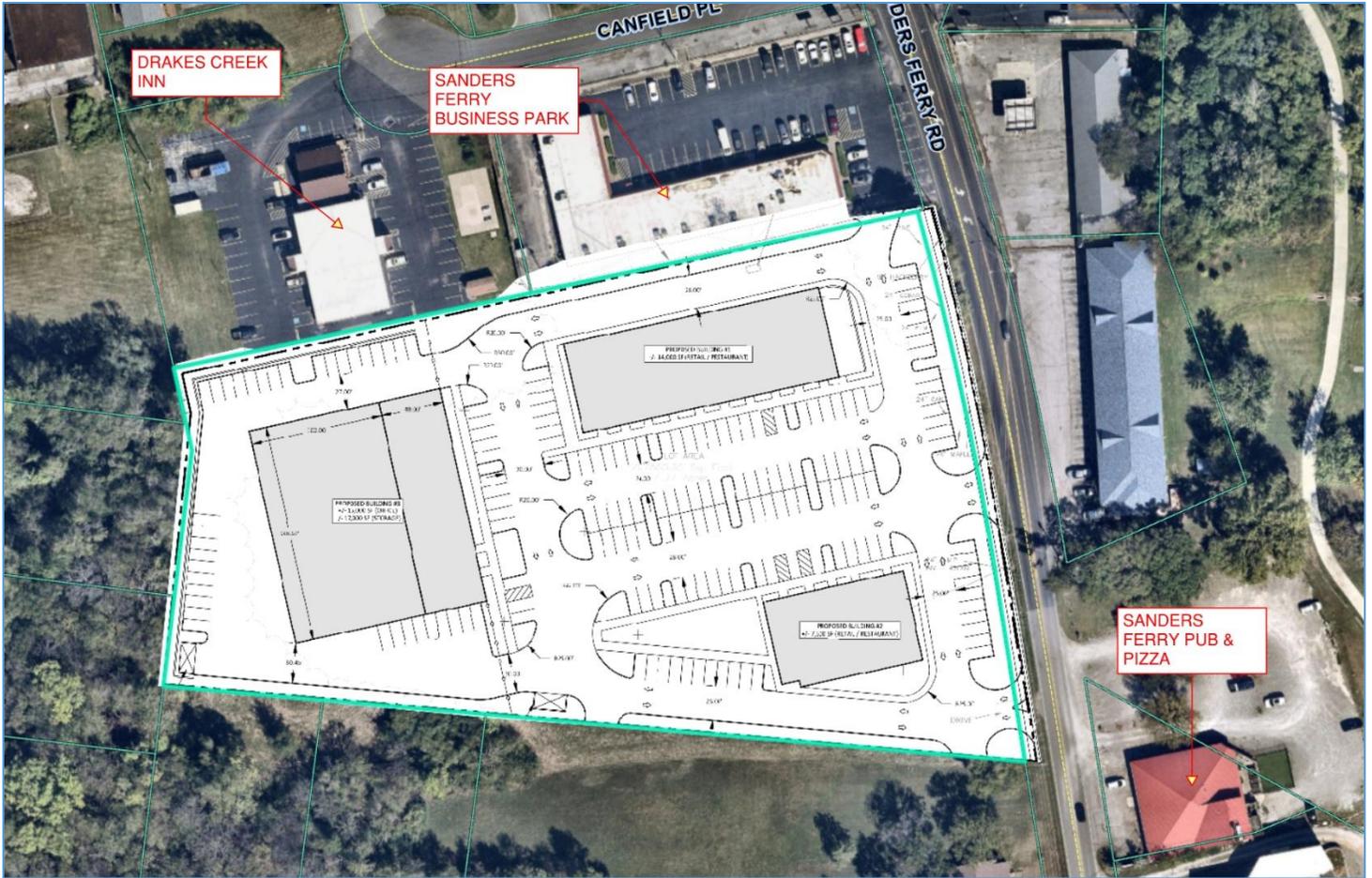
This site is a vacant 4.7 acre parcel located at 120 Sanders Ferry Road. It is zoned General Commercial (GC) and is bounded by GC zoning to the north, east and south. To the west is Dockside Neighborhood zoning. Drakes Creek Inn and Sanders Ferry Business Park are to the immediate north. Sanders Ferry Pub & Pizza is across Sanders Ferry to the south-east.



In
2018
a site
plan
was

approved by the Planning Commission for a mixed-use development consisting of 54 two-story residential units over 30,000sf of commercial retail space. That site plan has since expired, and the zoning changed from Old Town Commercial to General Commercial.

The proposed development is for 3 buildings and associated parking. Buildings 1 and 2, located closest to Sanders Ferry, will be single story commercial retail tenant spaces totaling about 21,500sf. The third building, at the rear of the property, will be a two-story headquarters for Pinaire Roofing, a commercial roofing company.



Access to the site will be via a full ingress/egress and a right-in/right-out off of Sanders Ferry Rd. Cross access will be provided to the Sanders Ferry Business Park parking lot to the north. 175 parking spaces are required based on the currently projected mix of retail and restaurant uses. 176 spaces are being provided.

The applicant is requesting three waivers:

Waiver Request #1

The zoning ordinance allows for the use of high-quality architectural metals to be used on a case-by-case basis, and these are proposed in limited quantities on the two retail buildings, and in greater quantities on the front of building 3. The primary material should be brick or stone, and buildings 2 and 3 meet this requirement. On building 3, high-quality architectural metal is the predominant material on the front (east side), though there is a good amount of brick on it as well. On the north and south sides of building 3, brick does wrap around the front corners, but the predominant material on those sides is standard metal siding, not the high-quality metal panels used on the other buildings. On the rear, facing west, is 100% standard metal siding. In the image below of building 3, proposed brick is shown highlighted in red. The areas highlighted in yellow is the standard metal siding for which the waiver is being requested. Building 3 is remote from the street. The front will have the most exposure. The north side faces

the rear of Drakes Creek Inn. The south side faces wooded undeveloped commercial property. It is expected that this property will develop soon. The rear faces heavily wooded commercial lots which have commercial development on their Walton Ferry frontage.

1. Waiver Request – Use of Metal Siding in GC – General Commercial Zoning (Building 3)

We request approval to allow metal as a permitted siding material on **Building 3 (office building)** within the GC zoning district.

Metal siding is an intentional architectural component of the proposed design and complements the material palette of the adjacent commercial buildings. The elevations demonstrate a cohesive, high-quality aesthetic that aligns with the City’s goals for commercial development. The front elevation of the office building provides an articulated and visually appealing façade that supports the appropriateness of this material in this context.





Waiver Request #2

The zoning ordinance requires that at least 75% (not 50% as stated by the applicant below) of replacement trees (replacement trees are those planted to replace existing trees that have been removed) be canopy type trees, rather than smaller ornamental type trees. The purpose of this requirement is to maintain and increase the city's overall percentage of tree canopy.

100% of the replacement trees required for this project are proposed to be ornamental type trees that do not develop a broad canopy (a total of 30). 54 canopy trees meeting other landscape requirements are proposed to be planted.

2. Waiver Request – Replacement Tree 50% Canopy Requirement

We also request a waiver from the **requirement that 50% of all replacement trees be canopy species.**

Due to site constraints, existing utility placement, and building/parking configuration, meeting the full canopy tree requirement is not feasible without creating conflicts affecting long-term tree health or project functionality. The landscape plan, however, provides a thoughtful and balanced mix of canopy and understory trees that maintains visual quality, supports buffering, and enhances the overall character of the development.

This requested deviation still fulfills the intent of the ordinance while accommodating practical limitations of the site.

Waiver Request #3

The zoning ordinance requires that a minimum of 20% of the overall lot area have a pervious surface, i.e. not paved or have a building covering it. The applicant is proposing to provide 17.5% pervious area.

3. Waiver Request – Minimum 20% Pervious Area Requirement

We also request a waiver from the **minimum requirement that 20% of the site be provided as pervious area.**

During the course of site design, the City of Hendersonville Fire Department required wider and more extensive fire lanes throughout the site to meet emergency access and life-safety standards. These requirements significantly increased the amount of paved areas on the site, making compliance with the 20% pervious area requirement infeasible at this stage of the project.

The current site layout reflects a good-faith effort to balance ordinance requirements with critical fire and life-safety needs, and the requested waiver allows the project to move forward while maintaining compliance with public safety standards.



STAFF COMMENTS – PLANNING DEPARTMENT:

2

1. Provide stamped site/topo survey.
2. Provide minimum 5' wide foundation planting bed at building 2.
3. Provide a cross access easement to facilitate a future shared commercial access drive that could connect through from Canfield Place to Cages Road.
4. Provide fence detail. Fence should be decorative black aluminum.
5. Dumpster may need to be relocated to allow for connection to south.
6. Work with staff to provide wall articulation on the proposed buildings.
7. Parking data must state the building square footage associated with each parking ratio.
8. Provide NES-approved electric service plan.
9. Show underground electric service to buildings.
10. Minimum of 75% of replacement trees must be shade type trees.
11. Provide full irrigation plan prior to building permit application.
12. The taller brick parapet should extend the full length of building 2 to screen the RTUs and to present a better appearance to the street.
13. The south elevation of building 2 needs further refinement. Works with staff on revisions.
14. 3" caliper evergreen tree will need to have a specified height of 10-12' ht.
15. On the building elevations, identify the different types of architectural metal panels being proposed.

Submitted by Timothy Whitten, RLA, AICP, Assistant Planning Director (December 17th, 2025)

STAFF COMMENTS – PUBLIC WORKS:

3

1. Please provide a roadway improvement plan for Sanders Ferry Road which shows the pavement widening and markings to be constructed along the Sanders Ferry Road frontage. The plan should shift the existing taper for the two-way left turn lane south so that three travel lanes are delineated along the development's Sanders Ferry Road frontage. The pavement widening should facilitate three 12' lanes, though the actual lane widths may vary to provide smooth tie-ins into the existing lane striping.
2. If stormwater detention is not provided for this development, the grading and drainage plan must be revised such that runoff bypassing the proposed inlets remains onsite. Please provide hydraulic routing calculations evaluating the proposed storm pipe system during the 25 year and 100 year design storms.

Submitted by Stephen Winzenread, PE, Assistant Public Works Director/City Engineer (December 17th, 2025)

STAFF COMMENTS – FIRE DEPARTMENT:**4**

1. Hendersonville Subdivision Regulations 3.7.1– Provide a utility plan that indicates the location of the proposed hydrants, fire service main sizes, lengths, locations, weights, materials, point of connection to city main; the sizes, types and locations of valves, valve indicators, regulators, meters and valve pits; and the depth that the top of the pipe is laid below grade. ACTION: Provide a utility plan that indicates the location of the proposed hydrants, fire service main sizes, lengths, locations, weights, materials, point of connection to city main; the sizes, types and locations of valves, valve indicators, regulators, meters and valve pits; and the depth that the top of the pipe is laid below grade per Hendersonville Subdivision Regulations 3.7.1
2. Provide a hydrant layout that meets the fire flow requirements and identify each source and the calculated flow rate. ACTION: Provide hydrant flow test.
3. IFC 2018 D103.5 – Gates securing the fire apparatus access road shall comply with all of the following: gate width shall not be less than 20 feet, gates shall be swinging or sliding type, electric gates shall be equipped with means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official. (Knox lock or Knox override) Methods of locking shall be submitted for approval by the fire code official. ACTION: Meet gate requirements per code IFC 2018 D103.5: gate width shall not be less than 20 feet, gates shall be swinging or sliding type, electric gates shall be equipped with means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official. (Knox lock or Knox override) Methods of locking shall be submitted for approval by the fire code official.

Submitted by Chris Willyard, Deputy Fire Marshal (December 17th, 2025)

STAFF COMMENTS – UTILITY DISTRICT:**5**

1. See note on cover sheet and C5.0

Submitted by David Brigance, HUD Construction Supervisor (December 17th, 2025)

December 11, 2025

City of Hendersonville – Planning Department
101 Maple Drive North
Hendersonville, TN 37075

RE: Waiver Requests for 1 Twenty at Sanders Ferry

On behalf of our client and project team for *1 Twenty at Sanders Ferry*, we respectfully submit the following waiver requests for consideration as part of the site plan review:

1. Waiver Request – Use of Metal Siding in GC – General Commercial Zoning (Building 3)

We request approval to allow **metal as a permitted siding material** on **Building 3 (office building)** within the GC zoning district.

Metal siding is an intentional architectural component of the proposed design and complements the material palette of the adjacent commercial buildings. The elevations demonstrate a cohesive, high-quality aesthetic that aligns with the City’s goals for commercial development. The front elevation of the office building provides an articulated and visually appealing façade that supports the appropriateness of this material in this context.

2. Waiver Request – Replacement Tree 50% Canopy Requirement

We also request a waiver from the **requirement that 50% of all replacement trees be canopy species**.

Due to site constraints, existing utility placement, and building/parking configuration, meeting the full canopy tree requirement is not feasible without creating conflicts affecting long-term tree health or project functionality. The landscape plan, however, provides a thoughtful and balanced mix of canopy and understory trees that maintains visual quality, supports buffering, and enhances the overall character of the development.

This requested deviation still fulfills the intent of the ordinance while accommodating practical limitations of the site.

3. Waiver Request – Minimum 20% Pervious Area Requirement

We also request a waiver from the **minimum requirement that 20% of the site be provided as pervious area**.

During the course of site design, the City of Hendersonville Fire Department required wider and more extensive fire lanes throughout the site to meet emergency access and life-safety standards. These requirements significantly increased the amount of paved areas on the site, making compliance with the 20% pervious area requirement infeasible at this stage of the project.

The current site layout reflects a good-faith effort to balance ordinance requirements with critical fire and life-safety needs, and the requested waiver allows the project to move forward while maintaining compliance with public safety standards.



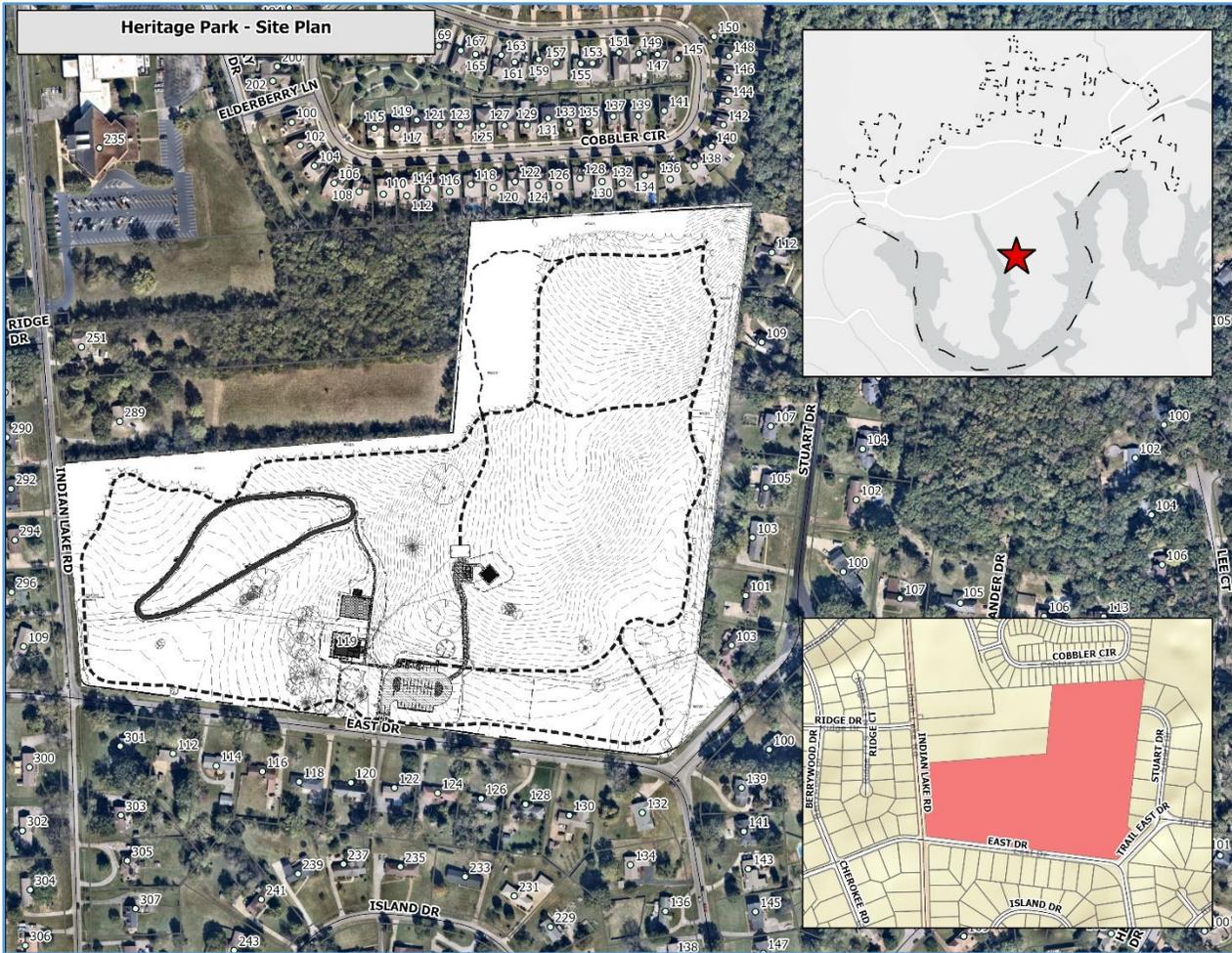
615 DESIGN GROUP

Thank you for your time and attention. We look forward to working with City staff throughout this process. If you have any questions at all regarding this request, you may contact me at [615-829-6899](tel:615-829-6899) or at cj@615designgroup.com.

Thank you,

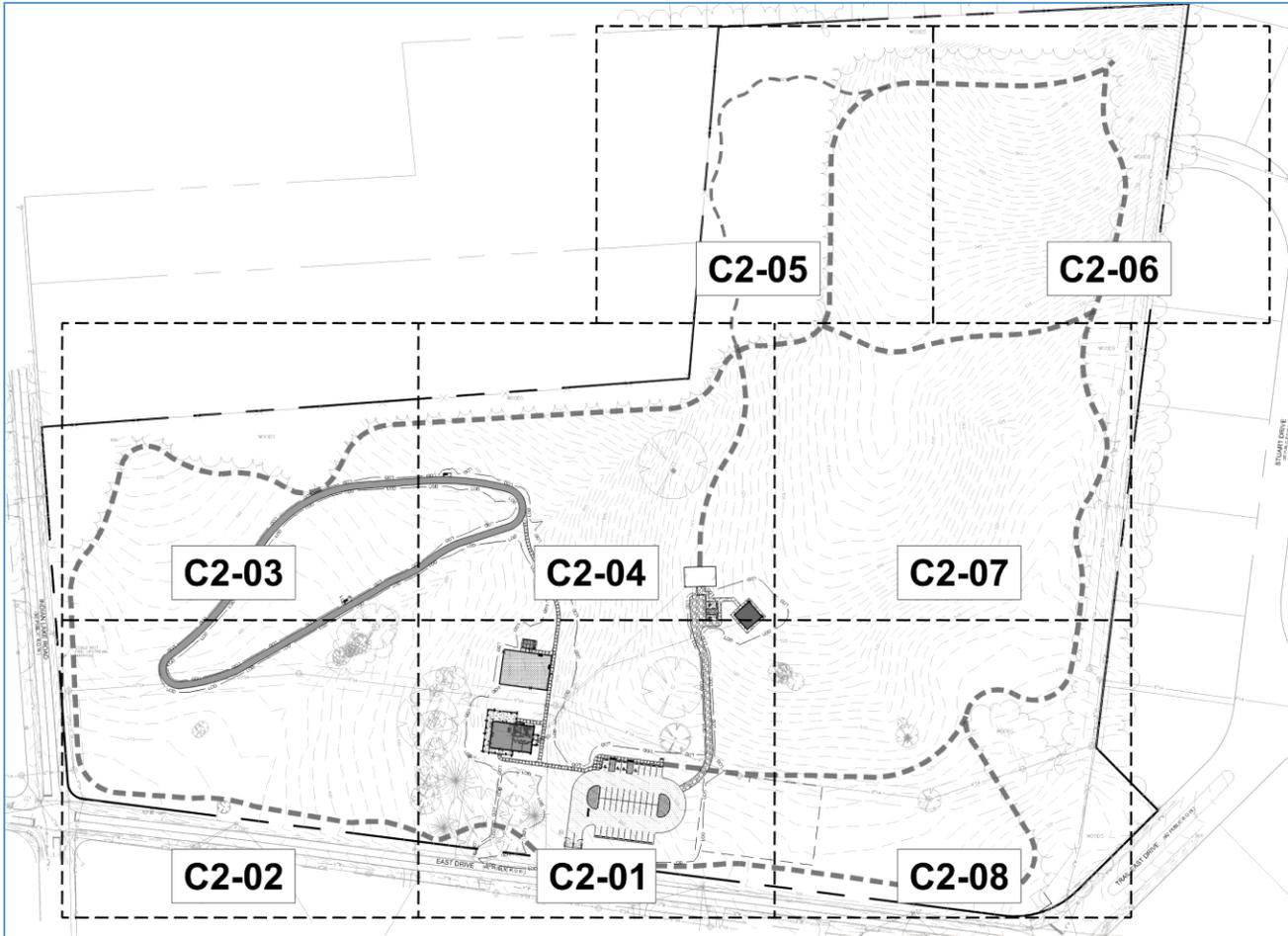
CJ Murrell, P.E.
615 Design Group
1517 Hunt Club Blvd, Suite 300
Gallatin, TN 37066

AGENDA DATE:	January 6 th , 2025
HPC PROJECT #:	SP-007014-2025
PROJECT NAME:	Heritage Park
PROJECT TYPE:	Site Plan
PROJECT LOCATION:	119 East Drive, Parcel 164 F 001.00
WARD:	Ward 4



STAFF REPORT: 1

The Planning Commission approved the concept plan for Heritage Park in October of last year. Now, Hendersonville Parks is submitting the site plan for HPC approval. This passive park will include walking trails, a multi-purpose facility, playground, pavilions, and 40 parking spaces. The existing barn will be renovated.

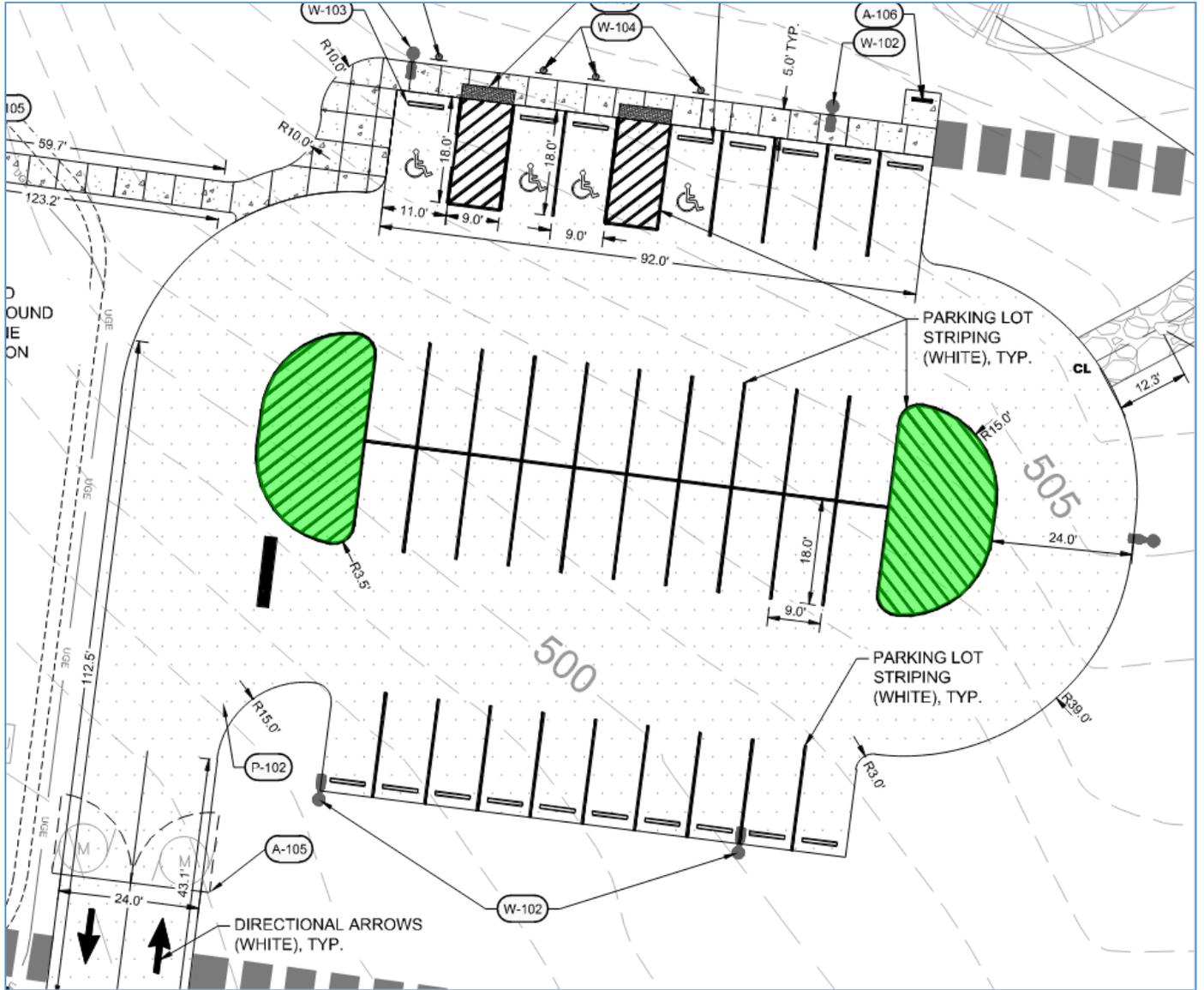


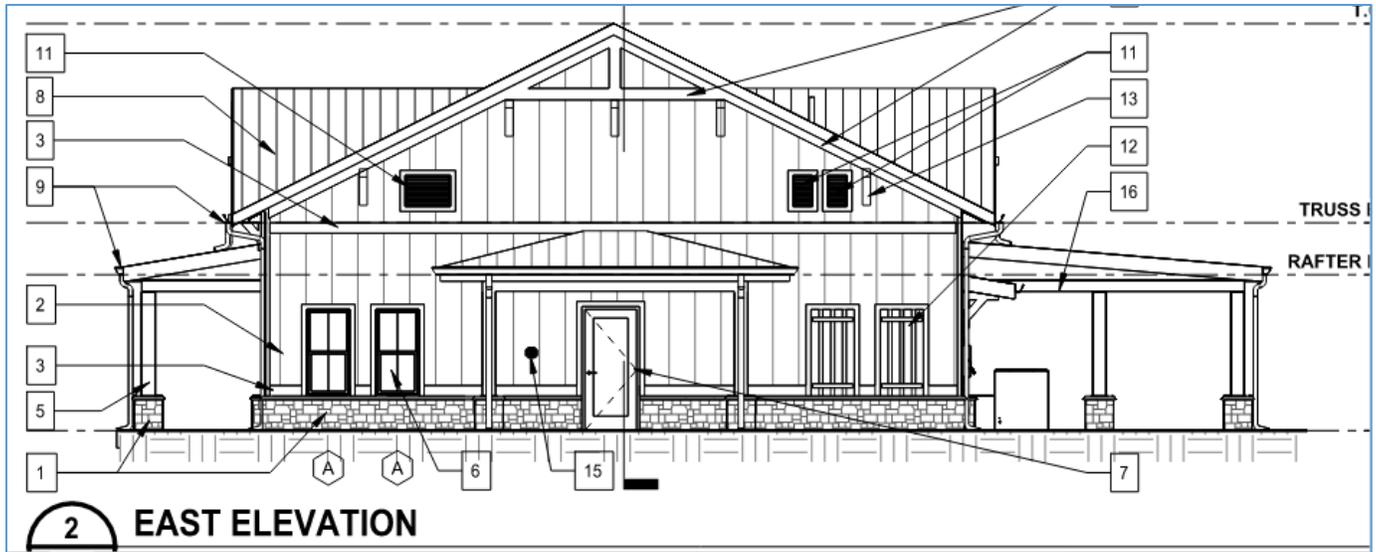
Parks is requesting a waiver from the requirement to provide landscape islands within the proposed parking lot. The zoning ordinance requires landscape islands to be provided every ten parking spaces and at the ends of all parking runs.

The design team and Parks Department would like to request the following requirement waived for the following reasons:

1. 11.4.7 | INTERIOR PARKING LOT LANDSCAPING: The parking lot islands become a maintenance nightmare for the Parks Department staff who is already overburdened with current maintenance needs. The small parking lot is surrounded by landscape and will still receive some shade from the many proposed street trees and from mature canopies of nearby existing trees. Furthermore, the waiving of the landscape island requirement allows the site to use funds for amenities elsewhere on the site.

In the first image below, the areas shown in green are where landscape islands would be required.





STAFF COMMENTS – PLANNING DEPARTMENT:

2

1. Indicate the proposed square footage of the multi-purpose building.

Submitted by Timothy Whitten, RLA, AICP, Assistant Planning Director (December 17th, 2025)

STAFF COMMENTS – PUBLIC WORKS:

3

1. Please resolve comments related to stormwater quantity and quality requirements.

Submitted by Stephen Winzenread, PE, Assistant Public Works Director/City Engineer (December 17th, 2025)

STAFF COMMENTS – FIRE DEPARTMENT:

4

1. No Comments

Submitted by Chris Willyard, Deputy Fire Marshal (December 17th, 2025)

STAFF COMMENTS – UTILITY DISTRICT:

5

1. See note on sheet C2-01 about fire hydrant.

Submitted by David Brigance, HUD Construction Supervisor (December 17th, 2025)



WAIVER REQUEST

To: Hendersonville Planning Department
From: Alisha Eley
Kimley-Horn and Associates, Inc.
Date: 12/11/2025
Subject: Heritage Park: Waiver Request

Heritage Park is a proposed public park amenity using Local Parks and Recreation Fund (LPRF) grant funding awarded to the City of Hendersonville. Amenities within the proposed park include a paved trail, natural mowed trail, playground, multipurpose building, and an event pavilion. The design proposed is thoughtful to provide minimal disturbance to the existing site and to consider cost effective solutions to supply the many amenities on site while staying within the construction budget.

The design team and Parks Department would like to request the following requirement waived for the following reasons:

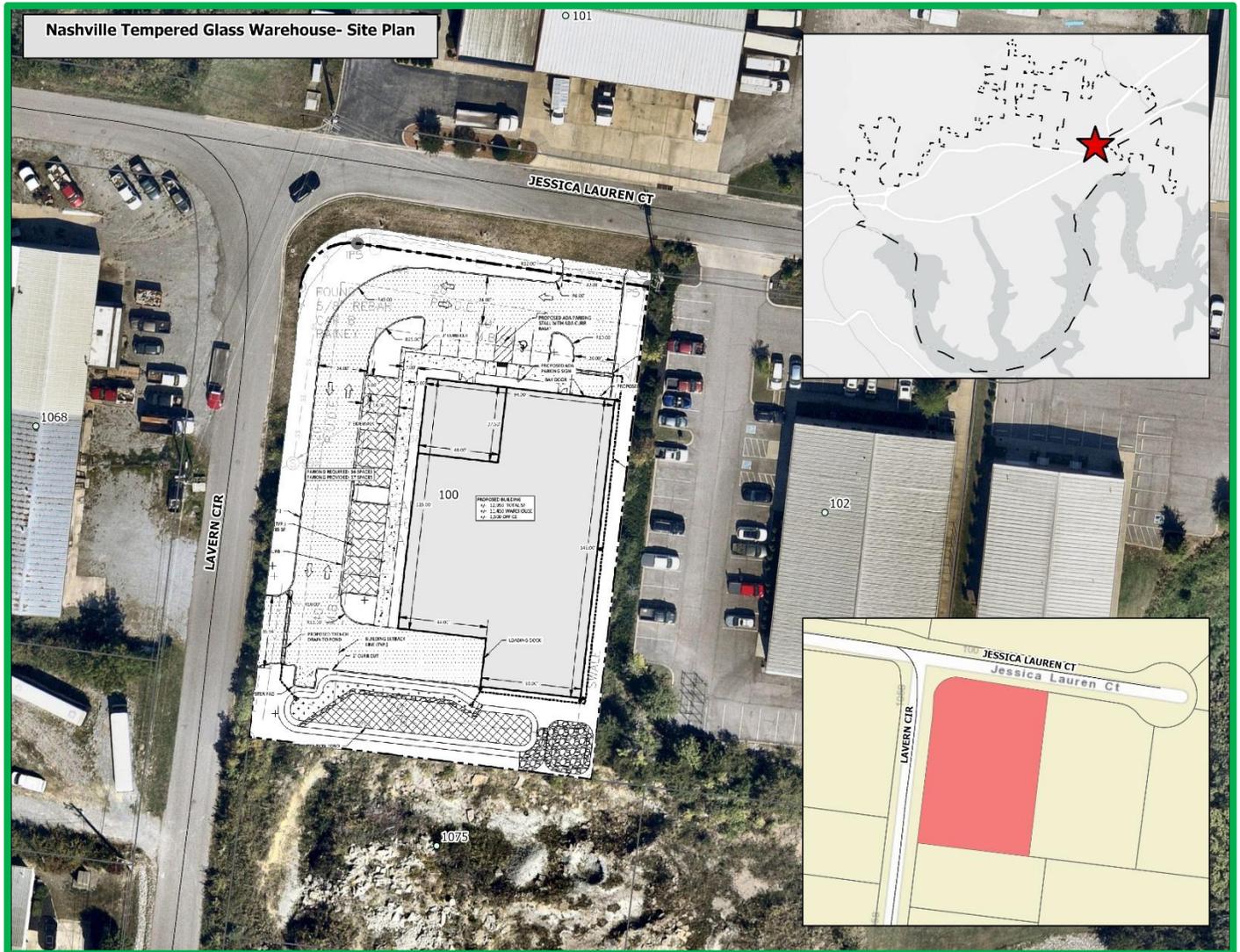
1. 11.4.7 | INTERIOR PARKING LOT LANDSCAPING: The parking lot islands become a maintenance nightmare for the Parks Department staff who is already overburdened with current maintenance needs. The small parking lot is surrounded by landscape and will still receive some shade from the many proposed street trees and from mature canopies of nearby existing trees. Furthermore, the waiving of the landscape island requirement allows the site to use funds for amenities elsewhere on the site.

Sincerely,

Alisha Eley, PLA, LEED AP, ASLA

Kimley-Horn | 10 Lea Avenue, Suite 400, Nashville, TN 37210
Direct: 615.564.2713 | Mobile: 937.733.9790 | Main: 615 564 2701

AGENDA DATE:	January 6 th , 2025
HPC PROJECT #:	SP-006994-2025
PROJECT NAME:	Nashville Tempered Glass Warehouse
PROJECT TYPE:	Site Plan
PROJECT LOCATION:	100 Jessica Lauren Ct, Parcel 146 100.00
WARD:	Ward 5



STAFF REPORT: 1

The applicant, Grant’s Fireworks Property Management, is requesting approval for the construction of a new warehouse facility. The proposed site for this development is the currently vacant parcel located at 100 Jessica Lauren Court. This property is situated at the corner of Lavern Circle and Jessica Lauren Court. The property is zoned as Heavy Commercial (HC) under the current zoning ordinance. The property to the north, east, and west are also zoned Heavy Commercial (HC) with the vacant property to the south being zoned Industrial (I).



The new building totals 12,950 square feet, consisting of 1,500 square feet of office space and 11,450 square feet of warehouse space. While 16 parking spaces are required, 17 parking spaces are being provided.

elevations indicates that the area surrounding the structure features multiple overhead doors positioned to face the street.

2. Waiver to Permit an Overhead Door Facing a Public Street (Section 12.3.6.9)

We also request a waiver to allow an **overhead service door to face a public street**. This orientation is necessary based on site access, building programming, and circulation requirements. The design incorporates appropriate architectural treatments and screening measures to ensure that the door is visually minimized and remains compatible with adjacent properties and the corridor.

Waiver Request

12.3.6.9 | OVERHEAD DOORS FOR SERVICE BAYS AND LOADING DOCKS

- A. As per [Chapter 11.2.12.1.C](#), loading spaces shall not be located in front or corner side yards.
- B. Overhead doors for service bays shall not face a public street nor shall they be on the side of the building facing on-coming traffic. The Planning Commission may waive this standard provided extra landscaping and/or other means of screening is provided, which, in the opinion of the Planning Commission, adequately blocks the view of the doors/openings. Doors on other sides of the building shall likewise be properly screened. See [Chapter 11.4](#) (Landscaping, Screening, and Tree Preservation).

Zoning Ordinance Requirements

In May 2019, the property at 103 and 104 Jessica Lauren Court was granted Site Plan approval by Planning Commission. This property is to the northeast of 100 Jessica Lauren Court.



The following waivers were requested and granted for the property.

Overhead doors: In commercial zones, overhead doors are not permitted to face a street. Many of the buildings in the area have overhead doors facing the street. Both proposed buildings have overhead doors facing north and south and will be visible from the street. One consideration is that given the orientation of the buildings at the end of the cul-de-sac, it is debatable that the proposed doors actually face a street.

Glazing: In commercial zones, buildings are required to have a minimum of 70% glazing on the building fronts facing a street. Again, most of the buildings in the area fall well short of this requirement, including the Crossfit next door. The applicant did significantly revise the building architecture to add some windows and front entry features, but falls well short of the minimum.

Waivers Granted to 103 & 104 Jessica Lauren Court in May 2019

RESUBMITTAL
RECEIVED
Dec 11 2025
PLANNING DEPT


615 DESIGN GROUP

December 11, 2025

City of Hendersonville – Planning Department
101 Maple Drive North
Hendersonville, TN 37075

RE: Waiver Requests for 100 Jessica Lauren Court

On behalf of our client, we respectfully submit this letter requesting approval of two waivers associated with the proposed development at **100 Jessica Lauren Court**. These requests are being made in accordance with the applicable provisions of the City of Hendersonville Zoning Ordinance.

1. Waiver from 60% Glazing Requirement (Section 12.3.6.5 – Heavy Commercial Zoning)

We are requesting approval to deviate from the required **60% glazing along the primary façade**. Due to the functional needs of the building layout and the operational requirements of the end user, achieving the full glazing percentage is not feasible. The proposed façade treatment will maintain an attractive and cohesive design consistent with surrounding development and the intent of the zoning district.

2. Waiver to Permit an Overhead Door Facing a Public Street (Section 12.3.6.9)

We also request a waiver to allow an **overhead service door to face a public street**. This orientation is necessary based on site access, building programming, and circulation requirements. The design incorporates appropriate architectural treatments and screening measures to ensure that the door is visually minimized and remains compatible with adjacent properties and the corridor.

We appreciate the City’s consideration of these requests and believe the proposed improvements meet the intent of the zoning ordinance while allowing the site to function safely and effectively. Please let us know if additional documentation, renderings, or design information is needed ahead of review.

Thank you for your time and attention. We look forward to working with City staff throughout this process. If you have any questions at all regarding this request you may contact me at [615-829-6899](tel:615-829-6899) or at ci@615designgroup.com.

Thank you,



CJ Murrell, P.E.
615 Design Group
1517 Hunt Club Blvd, Suite 300
Gallatin, TN 37066

Waiver Letter

STAFF COMMENTS – PLANNING DEPARTMENT:**2**

1. The 10-foot landscape buffer on south end of property needs to be called out on the plans.
2. Electric needs to be shown on the utility plan.
3. NES approved electrical service plans are required prior to final stamping of plans.
4. Water meters need to be screen with landscaping.
5. Resolve conflict of tree and water meter by shifting tree forward.
6. Show FDC on landscape plans.
7. Full irrigation plans are required.
8. Provide dumpster elevations.

Submitted by Caitlin Shinn, Planner (December 17th, 2025)

STAFF COMMENTS – PUBLIC WORKS:**3**

1. All Comments have been resolved.

Submitted by Stephen Winzenread, PE, Assistant Public Works Director/City Engineer (December 17th, 2025)

STAFF COMMENTS – FIRE DEPARTMENT:**4**

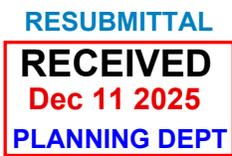
1. Hydrant flow test required before stamp.

Submitted by Chris Willyard, Deputy Fire Marshal (December 17th, 2025)

STAFF COMMENTS – UTILITY DISTRICT:**5**

1. Revise notes on utility sheet.

Submitted by David Brigance, HUD Construction Supervisor (December 17th, 2025)



December 11, 2025

City of Hendersonville – Planning Department
101 Maple Drive North
Hendersonville, TN 37075

RE: Waiver Requests for 100 Jessica Lauren Court

On behalf of our client, we respectfully submit this letter requesting approval of two waivers associated with the proposed development at **100 Jessica Lauren Court**. These requests are being made in accordance with the applicable provisions of the City of Hendersonville Zoning Ordinance.

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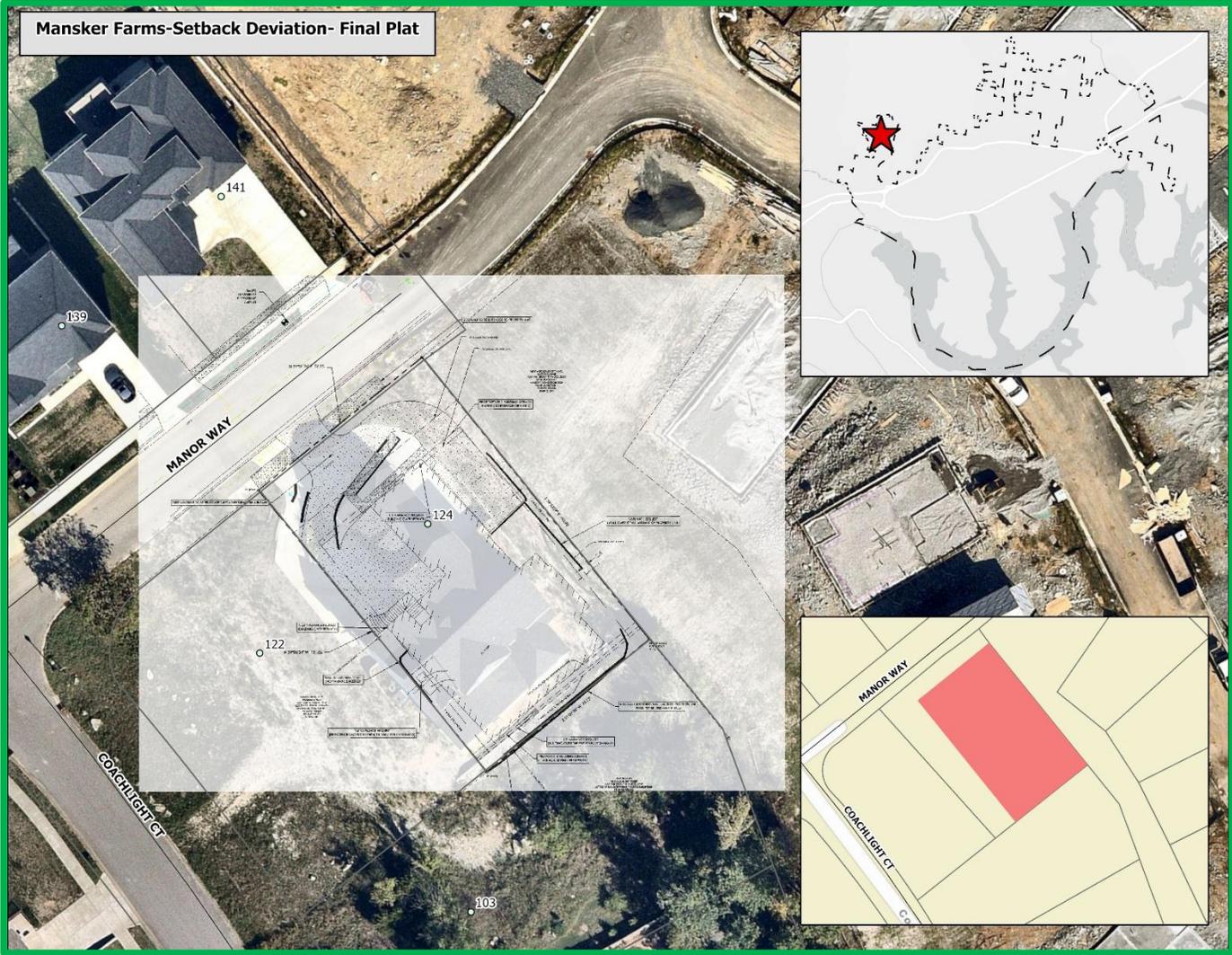
Thank you for your time and attention. We look forward to working with City staff throughout this process. If you have any questions at all regarding this request you may contact me at [615-829-6899](tel:615-829-6899) or at cj@615designgroup.com.

Thank you,

A handwritten signature in black ink that reads "CJ Murrell".

CJ Murrell, P.E.
615 Design Group
1517 Hunt Club Blvd, Suite 300
Gallatin, TN 37066

AGENDA DATE:	January 6 th , 2025
HPC PROJECT #:	SUB-006966-2025
PROJECT NAME:	Mansker Farms Ph 18 Sec 1 Setback Deviation
PROJECT TYPE:	Final Plat
PROJECT LOCATION:	124 Manor Way, Parcel 1144I N 020.00
WARD:	Ward 3



STAFF REPORT: 1

UPDATE TO STAFF REPORT:

The applicant is coordinating with the Mansker Farms Homeowners Association (HOA) regarding the proposed changes. As of the date of this staff report, the HOA Board has not provided a formal response but has confirmed in writing that a decision will be available prior to the January 6, 2026, Planning Commission meeting.

Mansker Farms

To Whom it May Concern,

The Mansker Farms Homeowners Association, Inc Board of Directors has received the formal request from Derek Finn regarding the home at 124 Manor Way, Hendersonville, TN 37075. The ARC Committee for the Association will review the request and make a final decision prior to the Planning Committee meeting in January.

Respectfully,

Mansker Farms Board of Directors

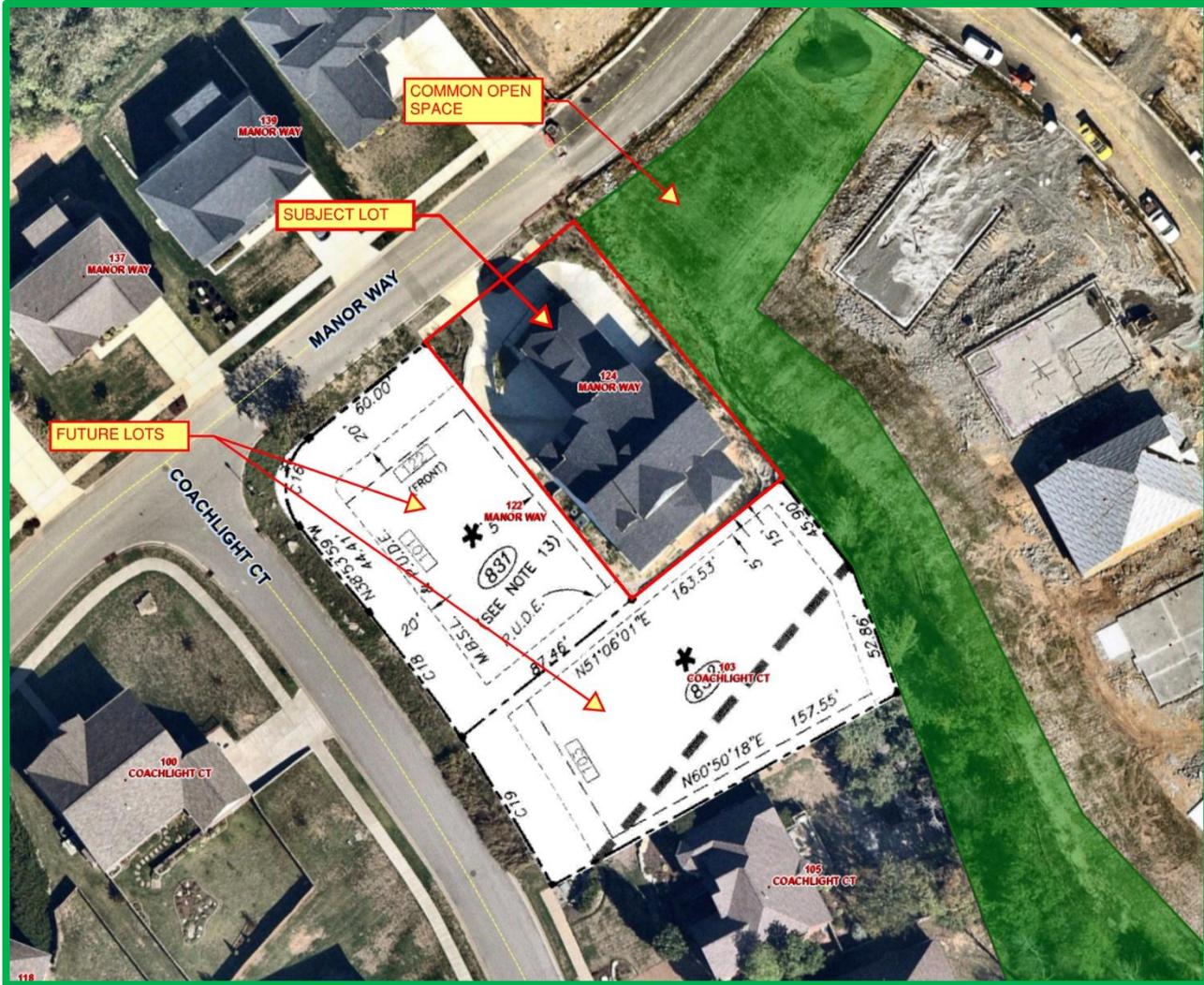
HOA Letter Confirmation

October 29, 2025 Staff Report:

The applicant, Wilson Bank & Trust, is requesting multiple deviations for the property located at 124 Manor Way. This parcel is situated within the Mansker Farm Planned Development, Phase 18, Section 1.

Mansker Farms Planned Development has the required minimum building setbacks of 30' front setback, **5' side setback**, and **rear setback of 10'** and required maximum lot coverage allowance of 30%. Lot coverage is a portion of a lot that is occupied by buildings or structures, including accessory structures, expressed as a percentage of the total lot area.

Properties to the west and south of the subject parcel are currently undeveloped. To the east, the property falls within Phase 19 Section 1A of the Mansker Farm development, which is actively under construction. Immediately beyond this property to the east, the area along the road is designated open space.



Historical Context

The property was initially purchased by an individual who successfully applied for the original variances from the Board of Zoning Appeals (BZA). The current applicant, Wilson Bank & Trust, has recently acquired the property back from the original owner and is now seeking to rectify the construction errors made by the previous owner.

In December 2021, the Board of Zoning Appeals (BZA) granted several variances for this property:

1. A variance reducing the south/rear building setback from 10 feet to **7.9 feet** for the main residence.
2. A variance reducing the setback for a retaining wall over 5 feet tall from 5 feet to **1 foot**, with the stipulation that footers could not trespass onto an adjacent property.
3. A variance increasing the maximum lot coverage from 30% to **38%**.

Since the 2021 BZA approval, Staff has determined that, as this property lies within a Planned Development, any further changes or deviations must be reviewed and approved by the Planning Commission.

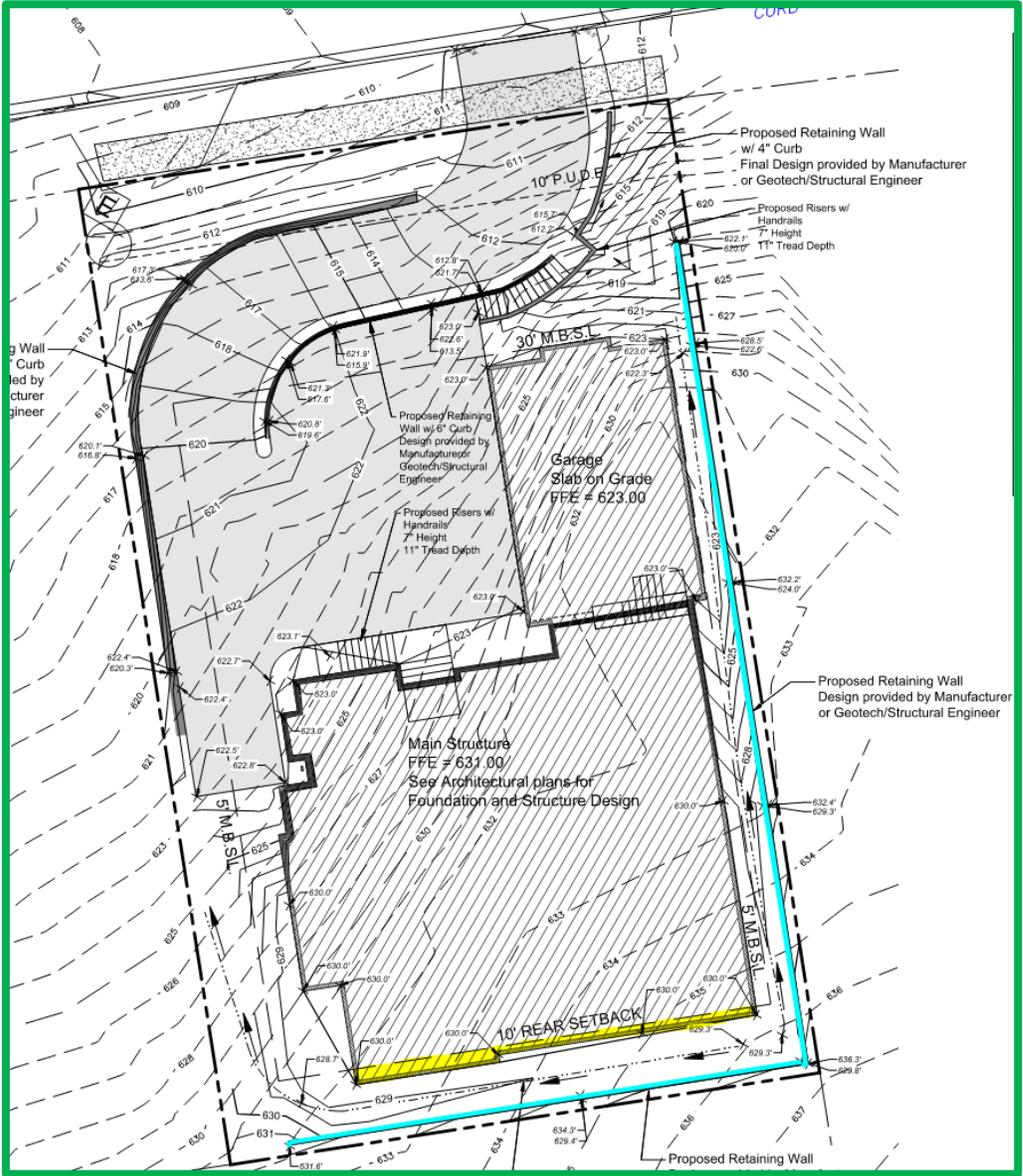


Exhibit for BZA Variance Approval



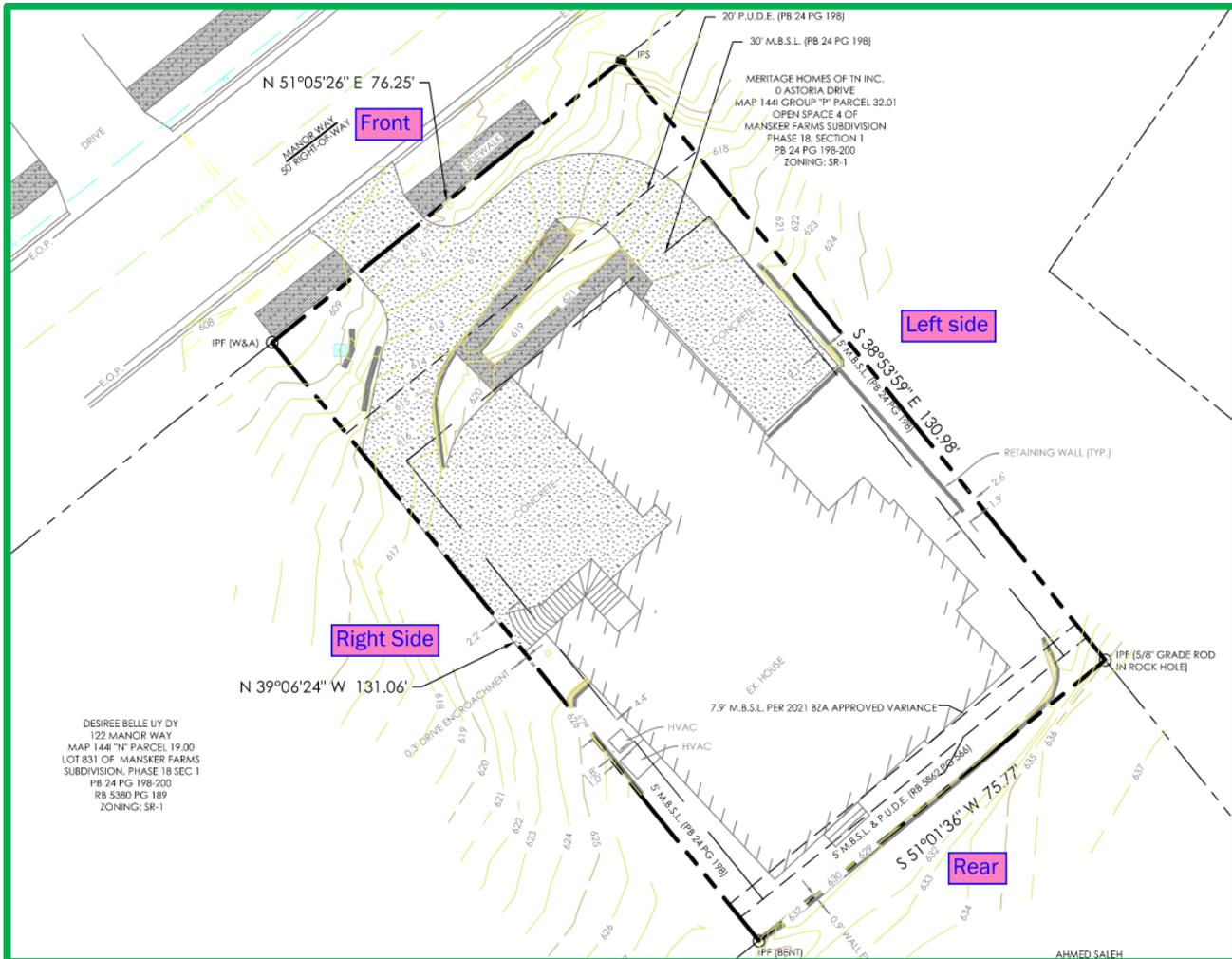
Existing Conditions



Existing Conditions

Proposed Requested Deviations

The applicant is now requesting approval for the following additional deviations:



Existing Conditions

Building Setback Encroachments:

1. **Front Setback:** To allow the front building wall to encroach **1.8 feet** over the required front setback, which would establish a new front building setback of **28.2 feet**. (See image 1 on page 6.)
2. **Right Side Setback:** To allow the right building wall to encroach **0.23 feet** over the required right-side setback, which would establish a new right-side building setback to be **4.77 feet**. (See image 1 on page 6.)
3. **Rear Setback:** To allow the rear building wall to encroach **1.9 feet** over the previously amended rear setback of 7.9 feet by BZA, which would establish a new rear building setback of **6 feet**. (See image 2 on page 6.)

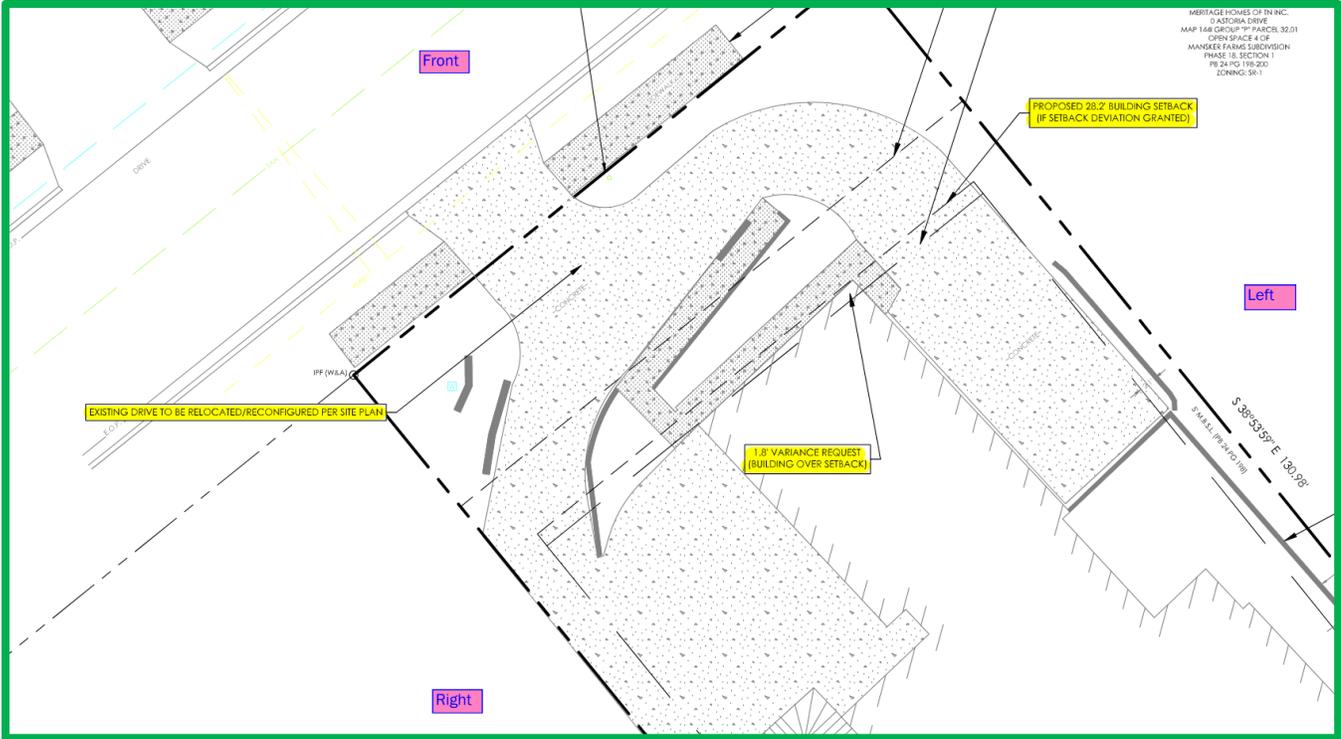


Image 1

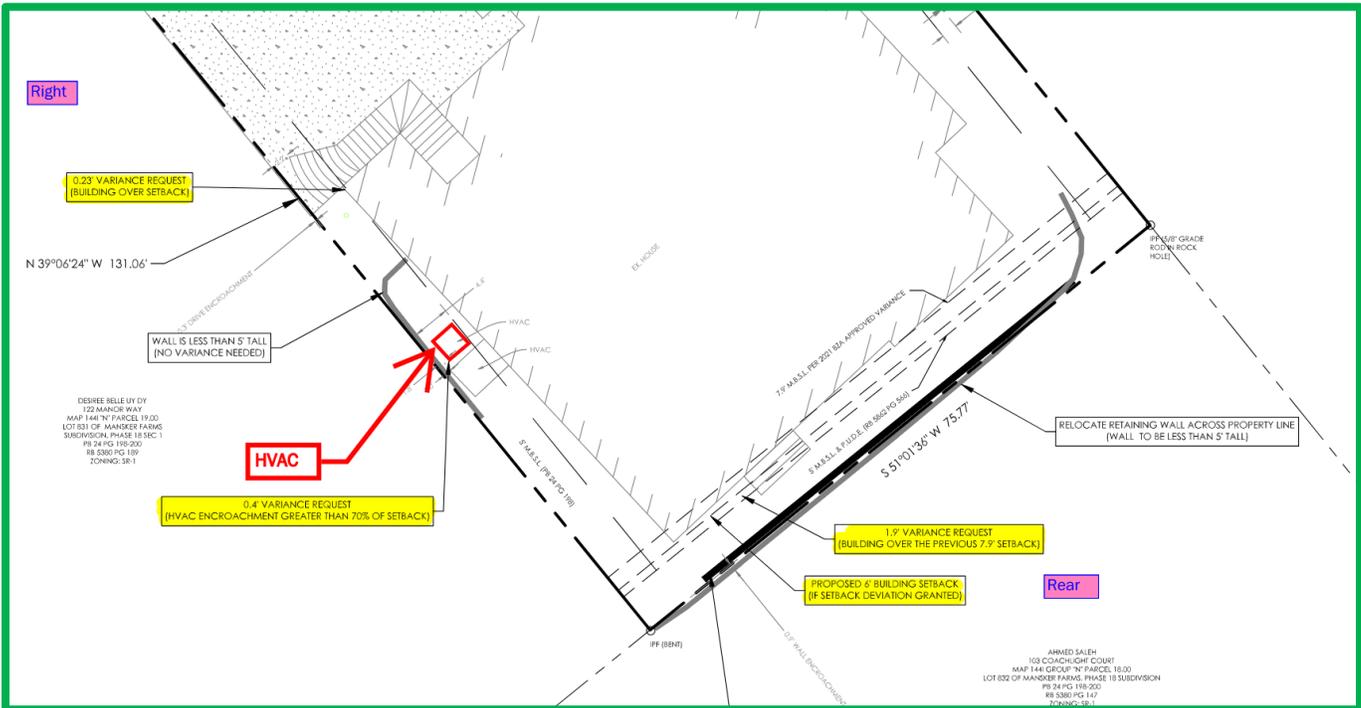
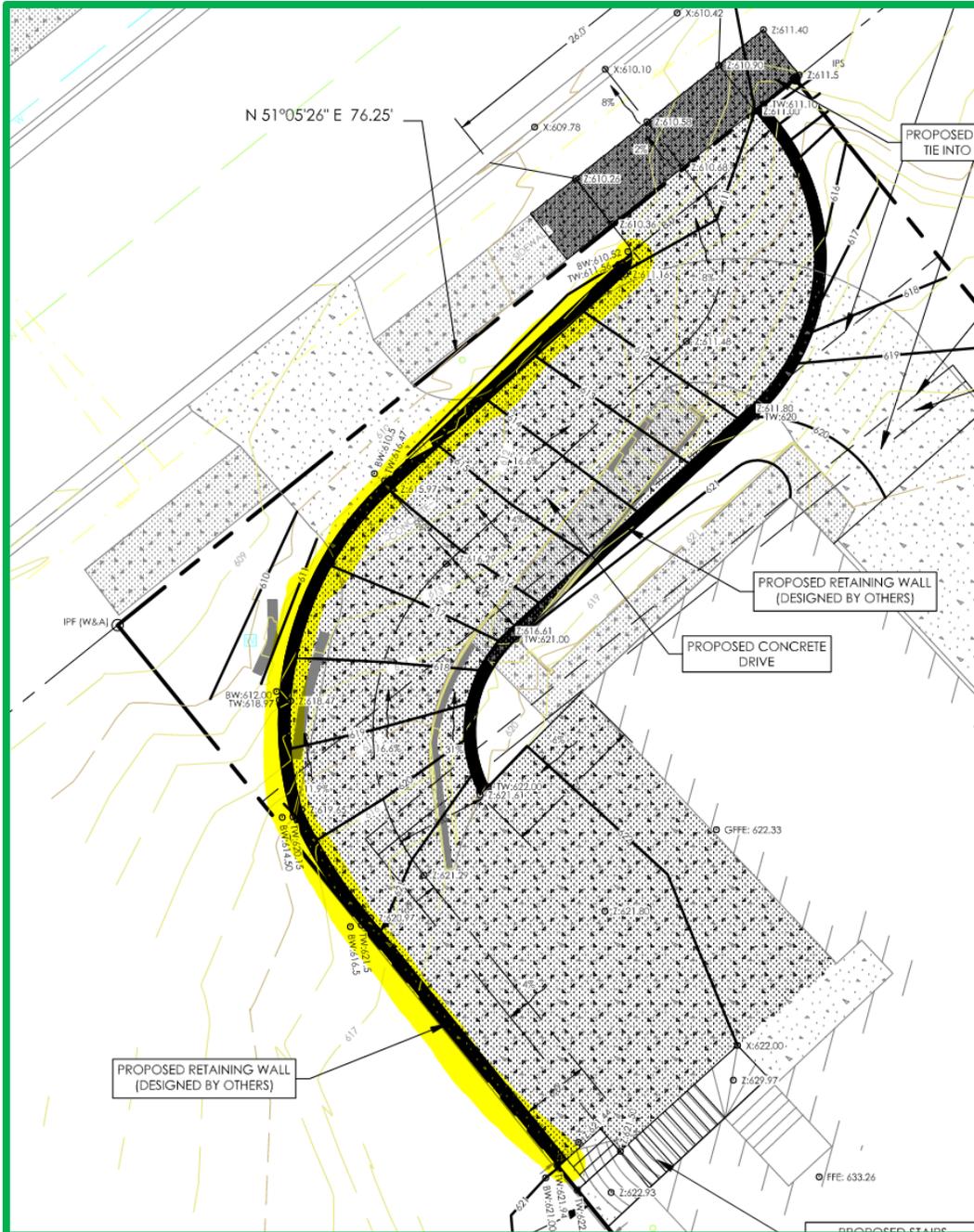


Image 2

Accessory Structure Encroachments:

- 4. **HVAC Unit:** To allow the HVAC to encroach **0.4 feet** into the allowed 70% encroachment. 70% of the required 5' setback is 3.5 feet. The new encroachment for the HVAC would be 80% at 1 foot from the property line. (See image 2 on page 6)
- 5. **Retaining Wall:** A deviation is requested to allow a retaining wall over 5 feet in height to be placed along the property line and driveway, instead of the required 5-foot separation distance. See image below.



Newly Proposed Driveway with retaining wall



SURVEYING – GENERAL CONTRACTING – LAND DEVELOPMENT

120 Main Street
Portland, TN 37148

615-864-0940

www.cornerstonedevelops.com

November 17, 2025

City of Hendersonville Planning and Zoning

101 N. Maple Drive

Hendersonville, TN 37075

Re: Request for Variance – Setback Requirement for Existing Headwall at 124 Manor Way

To Whom It May Concern:

I am writing to formally request a variance from the required **5-foot setback** for a structure over 5 feet in height, as outlined in the City's zoning regulations. The structure in question is an **existing retaining wall** located at **124 Manor Way (Tax Map 144I Group "N" Parcel 20.00)**. Due to site conditions and the nature of the infrastructure, we are requesting permission for the retaining wall to remain **on or near the property line** rather than meeting the standard 5' setback requirement.

This retaining wall is essential to maintaining proper drainage and slope stability on the property. Relocating or reconstructing said wall to meet the 5-foot setback would create significant challenges, including: **engineering issues, drainage impacts, excessive cost, disruption to existing infrastructure, environmental concerns, etc.**

Allowing it to remain in its current location will not negatively impact adjoining properties, nor will it alter the character, safety, or functionality of the surrounding area.

We appreciate your time and consideration of this request and would be happy to discuss the site conditions or provide additional information as needed. Please feel free to contact me at **(615) 864-0940**.

Thank you for your attention to this matter.

Thank you,

Ashley Viselli

Chief Administrative Officer

aviselli@cornerstonedevelops.com

Lot Coverage:

The last request is in regards to the requirements of Mansker Farm Planned Development that a maximum of 30% of the lot maybe covered by buildings or structures. For this lot, 30% would

be 2,993 square feet for all allowed structures or buildings on the property. The Board of Zoning Appeals granted an increase in the lot coverage from 30% to 38%, which changed the allowed square footage to 3,791. The house was built with 3,985 square feet, which is 40% lot coverage, which is a difference of 194 square feet and a 2% increase from the allowed lot coverage. The applicant is requesting the additional **2% lot coverage**, bringing the total requested lot coverage to **40%**.



CORNERSTONE
DEVELOPMENT SERVICES

SURVEYING – GENERAL CONTRACTING – LAND DEVELOPMENT

120 Main Street
Portland, TN 37148

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November 19, 2025

City of Hendersonville Planning and Zoning
101 N. Maple Drive
Hendersonville, TN 37075

Re: Request for Lot Coverage Deviation—at 124 Manor Way

To Whom It May Concern:

I am writing to formally request a lot coverage deviation for the property located at **124 Manor Way, Hendersonville, TN.**

The property is currently approved for **38% maximum lot coverage** under the applicable zoning regulations. After review, it has been determined that the existing conditions result in a total lot coverage of **40%**, reflecting a **2% deviation** from the approved allowance.

We respectfully request approval of this **2% lot coverage deviation** to allow the existing site improvements to remain as-is. This request does not alter the character of the surrounding properties, and the additional coverage does not create any adverse impacts on drainage, utilities, or neighboring parcels.

We appreciate your time and consideration of this request and would be happy to discuss the site conditions or provide additional information as needed. Please feel free to contact me at **(615) 864-0940.**

Thank you for your attention to this matter.

Thank you,

Ashley Viselli

Chief Administrative Officer

aviselli@cornerstonedevelops.com



Rear of home – existing wall is over property line



Left side of home from rear view



End of 3-car garage and existing sidewalk/stairs

STAFF COMMENTS – PLANNING DEPARTMENT:

2

1. When removing old driveway, the sidewalk and curb will need to be restored.

Submitted by Caitlin Shinn, Planner (December 17th, 2025)

STAFF COMMENTS – PUBLIC WORKS:

3

1. See Markups.

Submitted by Stephen Winzenread, PE, Assistant Public Works Director/City Engineer (December 17th, 2025)

STAFF COMMENTS – FIRE DEPARTMENT:

4

1. No comments.

Submitted by Chris Willyard, Deputy Fire Marshal (December 17th, 2025)

STAFF COMMENTS – UTILITY DISTRICT:

5

1. No Comments

Submitted by David Brigance, HUD Construction Supervisor (December 17th, 2025)



**CORNERSTONE
DEVELOPMENT SERVICES**

SURVEYING

Violations/Exceptions Summary for 124 Manor Way

Violations being addressed with proposed improvements:

1. Rear retaining wall being relocated entirely onto subject property and built to meet code requirements.
2. Western stairs reconfigured to have landing on property and meet building code.
3. Sidewalk in ROW to be extended to property line to meet subdivision regulation requirements.
4. Existing driveway and roadside retaining walls to be removed, reconfigured and reconstructed to allow for more vehicular friendly access and address several code issues.
5. Existing sidewalk along front of house to be removed to address code issues.

Exception being requested in order of priority:

1. Building Setback Encroachment #1: Front setback (1.8')
2. Building Setback Encroachment #2: Right Side setback (0.23')
3. Building Setback Encroachment #3: Rear setback (1.9')
4. Accessory Structure Encroachment #5: Retaining Wall
5. Accessory Structure Encroachment #4: HVAC Unit

AGENDA DATE:	January 6, 2026
RESOLUTION/ORDINANCE #	WILL BE ASSIGNED IF MOVED TO GC OR BOMA
HPC PROJECT #:	N/A
PROJECT NAME:	Development Impact Fees
PROJECT TYPE:	N/A
PROJECT LOCATION:	Citywide
WARD:	All



STAFF REPORT: 1

Impact fees are defined as one-time charges levied by local governments on new development. They are charged to developers to help municipalities recover infrastructure and public service costs. These collected fees are often used by agencies to mitigate the impacts that new developments incur with respect to traffic congestion, infrastructure (water, sewer, traffic signals), public parks, public safety and more.

Impact fees are commonly used by cities across the nation. The State of Tennessee allows municipalities to impose impact fees on new development. The City of Hendersonville’s charter also establishes the City’s authority to enact impact fees, subject to the Board’s adoption.

Cities in close proximity to Hendersonville that have implemented impact fees, include but are not limited to: Franklin, Murfreesboro, La Vergne, Smyrna and White House.

The City has discussed impact fees at BOMA meetings, committee meetings and at standalone public workshops. In 2019, BOMA voted not to enact impact fees at that time primarily due to the potential impact on commercial and industrial development in the city limits, as opposed to neighboring cities with no commercial impact fees. As such, at no time has the City ever had a formal impact fee. However, at times some developments have offered the City voluntary fees which were accepted, but no formal fee has ever been required.

Impact fees differ for residential and nonresidential use. Residential use includes single-family dwellings (including townhomes) and multi-family dwellings. The only difference, from an impact study perspective, between single-family and multi-family dwellings is the higher occupancy rate of 2.56 per single-family dwelling versus the occupancy rate of 1.65 per multi-family dwelling. The higher occupancy rate of single-family dwellings equates to more demand (use) on the system and therefore the fee would reflect the mathematical equity according to occupancy rate. Nonresidential uses include commercial, office, industrial and institutional. Fees for nonresidential uses are based on the demand that those types of uses/developments typically generate. For example, impact fees are higher for commercial development (shopping center) versus industrial development (manufacturing plant) due to the increased traffic (vehicle trips) and demand on city services that commercial uses produce vs. industrial uses.

The attached Impact Fee Study is being used as the basis for developing two differing Ordinances (one for Residential Fees only and one for Residential + Commercial fees). The Impact Fee Study identified the maximum allowable impact fees for various development types to ensure new development pays its fair share of infrastructure costs.

BOMA is currently seeking the opinion of the Planning Commission on pursuing Development Impact Fees for the City of Hendersonville and welcomes a discussion between members of the Commission to come to a consensus in support of or against the fees.

FISCAL IMPACT:**2**

Revenue generated by impact fees is only eligible for use on capital expenditures that mitigate impacts of new developments. Total revenue collections are determined by the level of activity but can be calculated for residential by multiplying the number of residential units built by the amount of the fee and for nonresidential by multiplying the square footage/1,000 by fee amount.

DISCUSSION:**3****MOTION AND VOTE:****ATTACHMENTS:****4**

1. October 29, 2025, Impact Fee Study - Public Safety & Transportation
2. January 26, 2024, Impact Fee Report - Parks

Impact Fee Study

Prepared for:
City of Hendersonville, Tennessee

October 29, 2025



4701 Sangamore Road
Suite S240
Bethesda, MD
(301) 320-6900
www.TischlerBise.com

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EXECUTIVE SUMMARY

The City of Hendersonville, Tennessee, retained TischlerBise to prepare this study to analyze the impacts of development on City capital facilities and to calculate impact fees based on that analysis. Through interviews and discussions with City staff, TischlerBise developed the proposed impact fees discussed in this study. Methodologies and calculations are presented in this report as supporting documentation for an update to the Impact Fee program in the City of Hendersonville.

Impact fees are collected from new construction at the time a building permit is issued and used to construct system improvements needed to accommodate new development. An impact fee represents future development's proportionate share of capital facility needs. Impact fees do have limitations and should not be regarded as the total solution for infrastructure funding. Rather, they are one component of a comprehensive funding strategy to ensure provision of adequate public facilities. Impact fees may only be used for capital improvements or debt service for growth-related infrastructure. In contrast to general taxes, impact fees may not be used for operations, maintenance, replacement of infrastructure, or correcting existing deficiencies. This update of Hendersonville's impact fees includes the following components:

1. Fire
2. Police
3. Transportation

Tennessee Legal Framework

While the State of Tennessee does not have specific authorizing legislation for impact fees, the State does grant the power for municipalities with a mayor-aldermanic charter to impose impact fees on new development. As a mayor-aldermanic charter city, the City of Hendersonville may:

“Establish, open, relocate, vacate, alter, widen, extend, grade, improve, repair, construct, reconstruct, maintain, light, sprinkle and clean public highways, streets, boulevards, parkways, sidewalks, alleys, parks, public grounds, public facilities, libraries and squares, wharves, bridges, viaducts, subways, tunnels, sewers and drains within or without the corporate limits, regulate their use within the corporate limits, assess fees for the use of or impact upon such property and facilities, and take and appropriate property therefor under § 7-31-107 -- 7-31-111 and § 29-16-203, or any other manner provided by general laws.”
(Tenn. Code Ann. § 6-2-201 (15))

General Legal Framework

Both state and federal courts have recognized the imposition of impact fees as a legitimate form of land use regulation, provided the fees meet standards intended to protect against regulatory takings. Land use regulations, development exactions, and impact fees are subject to the Fifth Amendment prohibition on taking of private property for public use without just compensation. To comply with the Fifth Amendment, development regulations must be shown to substantially advance a legitimate governmental interest. In the case of impact fees, that interest is in the protection of public health, safety, and welfare by ensuring development is not detrimental to the quality of essential public services. The means to this end are also important, requiring both procedural and substantive due process. The process followed to receive

community input (i.e., stakeholder meetings, work sessions, and public hearings) provides opportunities for comments and refinements to the impact fees.

There is little federal case law specifically dealing with impact fees, although other rulings on other types of exactions (e.g., land dedication requirements) are relevant. In one of the most important exaction cases, the U. S. Supreme Court found that a government agency imposing exactions on development must demonstrate an “essential nexus” between the exaction and the interest being protected (see *Nollan v. California Coastal Commission*, 1987). In a more recent case (*Dolan v. City of Tigard, OR*, 1994), the Court ruled that an exaction must also be “roughly proportional” to the burden created by development. However, the *Dolan* decision appeared to set a higher standard of review for mandatory dedications of land than for monetary exactions such as impact fees.

There are three reasonable relationship requirements for impact fees that are closely related to “rational nexus”, or “reasonable relationship” requirements enunciated by a number of state courts. Although the term “dual rational nexus” is often used to characterize the standard by which courts evaluate the validity of impact fees under the U.S. Constitution, we prefer a more rigorous formulation that recognizes three elements: “need,” “benefit,” and “proportionality.” The dual rational nexus test explicitly addresses only the first two, although proportionality is reasonably implied, and was specifically mentioned by the U.S. Supreme Court in the *Dolan* case. Individual elements of the nexus standard are discussed further in the following paragraphs.

All new development in a community creates additional demands on some, or all, public facilities provided by local government. If the capacity of facilities is not increased to satisfy that additional demand, the quality or availability of public services for the entire community will deteriorate. Impact fees may be used to recover the cost of development-related facilities, but only to the extent that the need for facilities is a consequence of development that is subject to the fees. The *Nollan* decision reinforced the principle that development exactions may be used only to mitigate conditions created by the developments upon which they are imposed. That principle clearly applies to impact fees. In this study, the impact of development on infrastructure needs is analyzed in terms of quantifiable relationships between various types of development and the demand for specific capital facilities, based on applicable level-of-service standards.

The requirement that exactions be proportional to the impacts of development was clearly stated by the U.S. Supreme Court in the *Dolan* case and is logically necessary to establish a proper nexus. Proportionality is established through the procedures used to identify development-related facility costs, and in the methods used to calculate impact fees for various types of facilities and categories of development. The demand for capital facilities is measured in terms of relevant and measurable attributes of development (e.g., a typical housing unit’s average weekday vehicle trips).

A sufficient benefit relationship requires that impact fee revenues be segregated from other funds and expended only on the facilities for which the fees were charged. Impact fees must be expended in a timely manner and the facilities funded by the fees must serve the development paying the fees. However, nothing in the U.S. Constitution or the state enabling legislation requires that facilities funded with fee revenues be available *exclusively* to development paying the fees. In other words, benefit may extend to a general area including multiple real estate developments. Procedures for the earmarking and

expenditure of fee revenues are discussed near the end of this study. All of these procedural as well as substantive issues are intended to ensure that new development benefits from the impact fees they are required to pay. The authority and procedures to implement impact fees is separate from and complementary to the authority to require improvements as part of subdivision or zoning review.

As documented in this report, the City of Hendersonville has complied with applicable legal precedents. Impact fees are proportionate and reasonably related to the capital improvement demands of new development. Specific costs have been identified using local data and current dollars. With input from City staff, TischlerBise identified demand indicators for each type of infrastructure and calculated proportionate share factors to allocate costs by type of development. This report documents the formulas and input variables used to calculate the impact fees for each type of public facility. Impact fee methodologies also identify the extent to which new development is entitled to various types of credits to avoid potential double payment of growth-related capital costs.

General Methodologies

There are three general methodologies for calculating impact fees. The choice of a particular methodology depends primarily on the timing of infrastructure construction (past, concurrent, or future) and service characteristics of the facility type being addressed. Each methodology has advantages and disadvantages in a particular situation, and can be used simultaneously for different cost components.

Reduced to its simplest terms, the process of calculating impact fees involves two main steps: (1) determining the cost of development-related capital improvements and (2) allocating those costs equitably to various types of development. In practice, though, the calculation of impact fees can become quite complicated because of the many variables involved in defining the relationship between development and the need for facilities within the designated service area. The following paragraphs discuss three basic methodologies for calculating impact fees and how those methodologies can be applied.

Cost Recovery (Past Improvements)

The rationale for recoupment, often called cost recovery, is that future development is paying for its share of the useful life and remaining capacity of facilities already built, or land already purchased, from which future development will benefit. This methodology is often used for utility systems that must provide adequate capacity before future development can take place.

Incremental Expansion (Concurrent Improvements)

The incremental expansion methodology documents current level-of-service (LOS) standards for each type of public facility, using both quantitative and qualitative measures. This approach assumes there are no deficiencies or surplus capacity in existing infrastructure, and future development is paying only its proportionate share for growth-related infrastructure. Revenue will be used to expand or provide additional facilities, as needed, to accommodate future development. An incremental expansion cost methodology is best suited for public facilities that will be expanded in regular increments to keep pace with development.

Plan-Based (Future Improvements)

The plan-based methodology allocates costs for a specified set of improvements to a specified amount of development. Improvements are typically identified in a long-range facility plan and development potential is identified by a land use plan. There are two options for determining the cost per demand unit: (1) total cost of a public facility can be divided by total demand units (average cost), or (2) the growth-share of the public facility cost can be divided by the net increase in demand units over the planning timeframe (marginal cost).

Conceptual Impact fee Calculation

In contrast to project-level improvements, impact fees fund growth-related infrastructure that will benefit multiple development projects, or the entire jurisdiction (referred to as system improvements). The first step is to determine an appropriate demand indicator for the particular type of infrastructure. The demand indicator measures the number of demand units for each unit of development. For example, an appropriate indicator of the demand for park facilities is population growth, and the increase in population can be estimated from the average number of residents per housing unit. The second step in the impact fee formula is to determine infrastructure units per demand unit, typically called level-of-service (LOS) standards. In keeping with the parks example, a common LOS standard is park amenities per resident. The third step in the impact fee formula is the cost of various infrastructure units. To complete the parks example, this part of the formula would establish the cost for purchasing and/or constructing new park amenities.

Credits

Regardless of the methodology, a consideration of credits is integral to the development of a legally defensible impact fee. There are two types of credits that should be addressed in impact fee studies and ordinances. The first is a revenue credit due to possible double payment situations, which could occur when other revenues may contribute to the capital costs of infrastructure covered by the impact fee. This type of credit is integrated into the fee calculation, thus reducing the fee amount. The second is a site-specific credit or developer reimbursement for dedication of land or construction of system improvements. An example would be if a developer builds a park with improvements and dedicates to the City. This type of credit is addressed in the administration and implementation of the development fee program. For ease of administration, TischlerBise normally recommends developer reimbursements for system improvements.

Proposed Impact Fee Components

Figure 1 summarizes service areas, methodologies, and cost components for the proposed fees.

Figure 1: Proposed Service Areas, Methodologies, and Cost Components

Necessary Public Services	Service Area	Cost Recovery	Incremental Expansion	Plan-Based	Cost Allocation
Fire	Citywide	N/A	Fire Facilities, Fire Apparatus	Development Fee Report	Population, Vehicle Trips
Police	Citywide	N/A	Police Facilities, Police Vehicles	Development Fee Report	Population, Vehicle Trips
Transportation	Citywide	N/A	Street Improvements	Development Fee Report	VMT

Calculations throughout this report are based on an analysis conducted using Excel software. Most results are discussed in the report using two, three, and four decimal places, which represent rounded figures. However, the analysis itself uses figures carried to their ultimate decimal places; therefore, the sums and products generated in the analysis may not equal the sum or product if the reader replicates the calculation with the factors shown in the report (due to the rounding of figures shown, not in the analysis).

Proposed Impact Fees

Proposed impact fees will be assessed per dwelling unit for residential development, and per 1,000 square feet of floor area for nonresidential development. The proposed impact fees represent the maximum allowable amount feasible for each development type, and this represents future development’s fair share of the cost for the appropriate capital facilities.

Hendersonville may adopt fees that are less than the amounts shown; however, a reduction in impact fee revenue will necessitate an increase in other revenues, a decrease in planned capital improvements, and/or a decrease in level-of-service standards. All costs in the Impact Fee Study represent current dollars with no assumed inflation over time. If costs change significantly over time, impact fees should be recalculated.

Figure 2: Proposed Impact Fees

Residential Fees per Unit				
Unit Size	Fire	Police	Street	Proposed Fees
Single Family	\$1,198	\$657	\$10,836	\$12,691
Multi-Family	\$772	\$423	\$7,745	\$8,940

Nonresidential Fees per 1,000 Square Feet				
Development Type	Fire	Police	Street	Proposed Fees
Industrial	\$337	\$185	\$2,792	\$3,314
Commercial	\$1,728	\$948	\$9,571	\$12,247
Office & Other Services	\$767	\$421	\$6,371	\$7,559
Institutional	\$1,054	\$579	\$8,763	\$10,396

FIRE

Methodology

The fire impact fee includes components for fire facilities, fire apparatus, the cost of calculating the fire impact fees, and a credit for existing fire debt. Fire impact fees are based on the incremental expansion methodology for facilities and apparatus and the plan-based methodology for the cost of calculating fire impact fees. Costs are allocated to both residential and nonresidential development using different demand indicators for each type of development. Residential impact fees are calculated on a per capita basis, then converted to an appropriate amount for each type of housing unit based on persons per housing unit factors. Nonresidential impact fees are calculated using nonresidential vehicle trips. Trip generation rates are highest for commercial/retail development and lowest for industrial development, whereas trip rates for office/institutional development fall between the other two categories. Using vehicle trip rates ensures that impact fees are consistent with the relative demand for fire services from nonresidential development.

Proportionate Share

TischlerBise recommends functional population to allocate the cost of fire infrastructure to residential and nonresidential development. Functional population is similar to what the U.S. Census Bureau calls "daytime population." This approach accounts for people living and working in a jurisdiction, but it also considers commuting patterns and time spent at home and at nonresidential locations. OnTheMap is a web-based mapping and reporting application that shows where workers are employed and where they live. It describes geographic patterns of jobs by their employment locations and residential locations as well as the connections between the two locations. OnTheMap was developed through a unique partnership between the U.S. Census Bureau and its Local Employment Dynamics (LED) partner states.

Residents that do not work are assigned 20 hours per day to residential development and 4 hours per day to nonresidential development (annualized averages). Residents that work in Hendersonville are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside Hendersonville are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2022 functional population data for Hendersonville, the most recent year available, the cost allocation for residential development is 76 percent while nonresidential development accounts for 24 percent of the demand for fire infrastructure.

Figure F1: Functional Population

Demand Units in 2022				
Residential			Demand Hours/Day	Person Hours
Total Population	61,321	↘		
Residents Not Working	31,688		20	633,760
Employed Residents	29,633	↘		
Employed in Hendersonville	3,880		14	54,320
Employed outside Hendersonville	25,753		14	360,542
Residential Subtotal				1,048,622
Residential Share				76%
Nonresidential				
Non-working Residents	31,688		4	126,752
Jobs Located in Hendersonville	20,667	↘		
Residents Employed in Hendersonville	3,880		10	38,800
Non-Resident Workers (inflow commuters)	16,787		10	167,870
Nonresidential Subtotal				333,422
Nonresidential Share				24%
Total				1,382,044

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics, Version 6.23.4 (employment).

Service Units

Residential

The “service unit” used for residential development is persons per housing unit (PPHU). This is a measure of, on average, the number of persons residing in each housing unit. As shown in Figure F2, there are 2.56 persons per single family unit and 1.65 persons per multifamily unit. Factors have been calculate based on data provided by the U.S. Census Bureau’s 2023 ACS 5-year estimates (further discussed in Appendix A).

Figure F2: Persons Per Housing Unit (PPHU)

Residential Development per Unit	
Development Type	Persons per Housing Unit ¹
Single Family	2.56
Multi-Family	1.65

1. See Land Use Assumptions

Nonresidential

TischlerBise recommends using nonresidential vehicle trips as the nonresidential service unit for fire infrastructure. Average weekday vehicle trip ends for nonresidential development are from the 11th edition of the reference book, *Trip Generation*, published in 2021 by the Institute of Transportation Engineers. A trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). Trip ends for nonresidential development are calculated per thousand square feet.

The basic trip adjustment factor is 50 percent for all nonresidential development except commercial and institutional. For commercial and institutional development, the trip adjustment factor is less than 50 percent because retail uses attract vehicles as they pass by on arterial and collector roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For an average size shopping center, the ITE (2017) indicates that on average 34 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66 percent of attraction trips have the shopping center as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor ($0.66 \times 0.50 = 0.33$) is approximately 33 percent of the trip ends.

Using the current estimates of nonresidential square footage, TischlerBise applies the trip generation rates and adjustment factors to calculate average weekday vehicle trips for nonresidential development in Hendersonville. TischlerBise estimates that there are 69,915 average weekday vehicle trips attributable to existing nonresidential development in Hendersonville.

Figure F3: Current Estimate of Nonresidential Vehicle Trips

Development Type	Dev Unit	ITE Code	Avg Wkday VTE	Trip Adjustment	Adjusted Wkday VTE	2025 Dev Units	2025 Veh Trips
Industrial	KSF	110	4.75	50%	2.38	2,758	6,550
Commercial	KSF	820	37.01	33%	12.21	3,101	37,877
Office & Other Services	KSF	710	10.84	50%	5.42	1,908	10,341
Institutional	KSF	520	22.59	33%	7.45	2,032	15,147
Total Nonresidential Trips							69,915

Fire Facilities – Incremental Expansion

Existing Standards and Cost Factors

Hendersonville currently provides 53,357 square feet of fire facilities to existing development and plans to maintain the existing level of service by constructing additional fire facilities to serve future development. To allocate the proportionate share of demand to residential and nonresidential development, this analysis uses proportionate share factors shown in Figure F1. Hendersonville’s existing LOS for residential development is 0.6062 square feet per person (53,357 square feet X 76 percent residential share / 66,898 persons). The nonresidential level of service is 0.1832 square feet per vehicle trip (53,357 square feet X 24 percent nonresidential share / 69,915 vehicle trips). Based on recent fire station construction costs in Tennessee this analysis uses a construction cost estimate of \$450 per square foot. For fire facilities, the cost is \$272.78 per person (0.6062 square feet per person X \$450 per square foot) and \$82.42 per vehicle trip (0.1832 square feet per vehicle trip X \$450 per square foot).

Figure F4: Existing Standards for Fire Facilities

Description	Square Feet
Station 1	4,880
Station 2	14,460
Station 3	8,434
Station 4	3,200
Station 5	7,354
Station 6	6,000
Station 7	9,029
Total	53,357

Cost Factors	
Cost per Square Foot	\$450

Level-of-Service (LOS) Standards	
Existing Square Feet	53,357
Residential	
Residential Share	76%
2025 Population	66,898
Square Feet per Person	0.6062
Cost per Person	\$272.78
Nonresidential	
Nonresidential Share	24%
2025 Vehicle Trips	69,915
Square Feet per Vehicle Trip	0.1832
Cost per Vehicle Trip	\$82.42

Source: Hendersonville Fire Department

Projected Demand

Hendersonville plans to maintain the existing level of service for fire facilities over the next 10 years. Based on a projected population increase of 10,455 persons, future residential development demands approximately 6,338 square feet of fire facilities (10,455 additional persons X 0.6062 square feet per person). With projected nonresidential growth of 9,478 vehicle trips, future nonresidential development demands approximately 1,736 square feet of fire facilities (9,478 additional vehicle trips X 0.1832 square feet per vehicle trip). The growth-related cost of fire facilities is \$3,633,057 (8,073 square feet X \$450 per square foot).

Figure F5: Growth-Related Need for Fire Facilities

Type of Infrastructure	Level of Service	Demand Unit	Cost per Sq Ft
Fire Facilities	0.6062 Square Feet	per Person	\$450
	0.1832 Square Feet	per Vehicle Trip	

Demand for Fire Facilities					
Year	Population	Vehicle Trips	Square Feet		
			Residential	Nonresidential	Total
2025	66,898	69,915	40,551	12,806	53,357
2026	67,943	70,803	41,185	12,968	54,153
2027	68,989	71,703	41,819	13,133	54,952
2028	70,034	72,616	42,453	13,300	55,753
2029	71,080	73,542	43,086	13,470	56,556
2030	72,125	74,482	43,720	13,642	57,362
2031	73,171	75,436	44,354	13,817	58,171
2032	74,216	76,404	44,988	13,994	58,982
2033	75,262	77,386	45,621	14,174	59,795
2034	76,307	78,382	46,255	14,356	60,612
2035	77,353	79,393	46,889	14,542	61,430
Increase	10,455	9,478	6,338	1,736	8,073
Growth-Related Expenditures			\$2,851,877	\$781,180	\$3,633,057

Fire Apparatus – Incremental Expansion

Existing Standards and Cost Factors

Hendersonville currently provides 36 units of fire apparatus to existing development and plans to maintain the existing level of service by acquiring additional apparatus to serve future development. Based on costs provided by staff, the weighted average cost of the existing fleet is \$554,613 per unit. The analysis uses this cost as a proxy for future apparatus costs.

Figure F6: Existing Fire Apparatus Inventory

Description	Units	Unit Cost	Total Cost
1999 American Eagle Pumper	1	\$992,967	\$992,967
Tactical Rescue Trailer	1	\$9,000	\$9,000
Jet Skis	2	\$30,000	\$60,000
2007 E-One Pumper Custom Chassis	1	\$875,000	\$875,000
2011 E-One 100' Platform Ladder Truck	1	\$2,000,000	\$2,000,000
2012 Chevrolet Silverado 2500	1	\$46,703	\$46,703
2012 Chevrolet Tahoe	1	\$46,703	\$46,703
2012 E-One Pumper Custom Chassis	1	\$910,000	\$910,000
CBRNE Fire/Rescue Boat (33-FT)	1	\$400,000	\$400,000
12 Ft. Rigid Hull Inflatable Boat with Motor	2	\$22,000	\$44,000
2013 E-One Typhoon Pumper	1	\$992,967	\$992,967
2013 E-One Cyclone 100' Ladder Truck	1	\$1,999,565	\$1,999,565
2015 Chevrolet Silverado	2	\$95,000	\$190,000
2015 SUTPHEN Engine	1	\$992,967	\$992,967
2015 Spartan	1	\$1,100,000	\$1,100,000
2016 Kawasaki Mule	1	\$16,000	\$16,000
2017 Chevrolet Silverado	2	\$46,703	\$93,406
2018 Chevrolet Silverado 1500	2	\$46,703	\$93,406
2018 Pierce Enforcer Pumper	2	\$1,985,934	\$3,971,868
2019 Chevrolet Tahoe	1	\$46,703	\$46,703
2019 Chevrolet Silverado 1500	1	\$46,703	\$46,703
2021 Chevrolet Silverado 2500	1	\$46,703	\$46,703
2022 Ford PPV Explorer	1	\$46,703	\$46,703
2022 Pierce Enforcer Pumper	1	\$992,967	\$992,967
2023 Chevrolet Tahoe	1	\$46,703	\$46,703
2025 Chevrolet Silverado 2500	2	\$46,703	\$93,406
2023 Pierce Enforcer Pumper	1	\$819,090	\$819,090
2024 Pierce Enforcer Pumper	1	\$992,967	\$992,967
2025 Pierce Enforcer Aerial 107' Ladder Truck	1	\$1,999,565	\$1,999,565
Total	36	\$554,613	\$19,966,062

To allocate the proportionate share of demand to residential and nonresidential development, this analysis uses proportionate share factors shown in Figure F1. Hendersonville’s existing LOS for residential development is 0.00041 units per person (36 units X 76 percent residential share / 66,898 persons). The nonresidential level of service is 0.00012 units per vehicle trip (36 units X 24 percent nonresidential share / 69,915 vehicle trips). For fire apparatus, the cost is \$226.83 per person (0.00041 units per person X \$554,613 per unit) and \$68.54 per vehicle trip (0.00012 units per vehicle trip X \$554,613 per unit).

Figure F7: Existing Standards for Fire Apparatus

Cost Factors	
Weighted Average per Unit	\$554,613

Level-of-Service (LOS) Standards	
Existing Units	36
Residential	
Residential Share	76%
2025 Population	66,898
Units per Person	0.00041
Cost per Person	\$226.83
Nonresidential	
Nonresidential Share	24%
2025 Vehicle Trips	69,915
Units per Vehicle Trip	0.00012
Cost per Vehicle Trip	\$68.54

Source: Hendersonville Fire Department

Projected Demand

Hendersonville plans to maintain the existing level of service for fire apparatus over the next 10 years. Based on a projected population increase of 10,455 persons, future residential development demands approximately 4.3 units (10,455 additional persons X 0.00041 units per person). With projected nonresidential growth of 9,478 vehicle trips, future nonresidential development demands approximately 1.2 units (9,478 vehicle trips X 0.00012 units per vehicle trip). The growth-related cost of fire apparatus is \$3,021,069 (5.4 units X \$554,613 per unit).

Figure F8: Growth-Related Need for Fire Apparatus

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Fire Apparatus	0.00041 Units	per Person	\$554,613
	0.00012 Units	per Vehicle Trip	

Demand for Fire Apparatus					
Year	Population	Vehicle Trips	Units		
			Residential	Nonresidential	Total
2025	66,898	69,915	27.4	8.6	36.0
2026	67,943	70,803	27.8	8.7	36.5
2027	68,989	71,703	28.2	8.9	37.1
2028	70,034	72,616	28.6	9.0	37.6
2029	71,080	73,542	29.1	9.1	38.2
2030	72,125	74,482	29.5	9.2	38.7
2031	73,171	75,436	29.9	9.3	39.2
2032	74,216	76,404	30.4	9.4	39.8
2033	75,262	77,386	30.8	9.6	40.3
2034	76,307	78,382	31.2	9.7	40.9
2035	77,353	79,393	31.6	9.8	41.4
Increase	10,455	9,478	4.3	1.2	5.4
Growth-Related Expenditures			\$2,371,479	\$649,590	\$3,021,069

Impact Fee Study – Plan-Based

The cost to prepare the fire impact fee equals \$20,274. TischlerBise recommends that Hendersonville update its report every five years. Based on this cost, proportionate shares, and five-year projections of new development from the Land Use Assumptions detailed in Appendix A, the cost is \$2.95 per person and \$1.07 per vehicle trip.

Figure F9: Impact Fee Study Expense

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Fire	\$20,274	Residential	76%	Population	5,228	\$2.95
		Nonresidential	24%	Vehicle Trips	4,567	\$1.07

Debt Credit

The fire impact fees include a credit for existing debt service. Hendersonville has bond financed recent fire facilities construction and the purchase of fire apparatus. A credit is necessary since new development will pay the fire impact fee and will also generate property tax revenue used to repay existing debt service. As shown in Figure F10, the principal portion of existing debt service equals \$3,742,747 over the next 9 years. To allocate the proportionate share of demand to residential and nonresidential development, this analysis uses proportionate share factors shown in Figure F1. Annual principal payments are divided by projected population and vehicle trips in each year to estimate the principal payment per person and vehicle trip. To account for the time value of money, annual principal payments per person and trip are discounted using a net present value formula based on an interest rate of 4.0 percent. The total net present value of future principal payments is \$34.46 per person and \$10.49 per vehicle trip.

Figure F10: Fire Debt Credit

Year	Principal ¹	Residential Share (76%)	Population	Per Person	Nonresidential Share (24%)	Vehicle Trips	Per Vehicle Trip
2025	\$593,649	\$451,173	66,898	\$6.74	\$142,476	69,915	\$2.04
2026	\$600,429	\$456,326	67,943	\$6.72	\$144,103	70,803	\$2.04
2027	\$427,381	\$324,810	68,989	\$4.71	\$102,571	71,703	\$1.43
2028	\$429,153	\$326,156	70,034	\$4.66	\$102,997	72,616	\$1.42
2029	\$432,697	\$328,850	71,080	\$4.63	\$103,847	73,542	\$1.41
2030	\$434,469	\$330,197	72,125	\$4.58	\$104,273	74,482	\$1.40
2031	\$274,989	\$208,992	73,171	\$2.86	\$65,997	75,436	\$0.87
2032	\$274,989	\$208,992	74,216	\$2.82	\$65,997	76,404	\$0.86
2033	\$274,989	\$208,992	75,262	\$2.78	\$65,997	77,386	\$0.85
Total	\$3,742,747	\$2,844,487		\$40.48	\$898,259		\$12.33

Discount Rate	4.0%
Net Present Value	\$34.46

Discount Rate	4.0%
Net Present Value	\$10.49

1. Sum of the four current bonds for fire stations and apparatus

Proposed Fire Impact Fees

Infrastructure components and cost factors used to calculate the proposed fire impact fees are summarized in the upper portion of Figure F11. The total capital cost is \$468.10 per person and \$141.54 per vehicle trip.

Fire impact fees for residential development are assessed per housing unit and vary proportionately according to the number of persons per housing unit. For a single-family unit, the fee of \$1,198 is calculated using a cost of \$468.10 per person multiplied by 2.56 persons per housing unit.

Fire impact fees for nonresidential development are assessed per 1,000 square feet and vary proportionately according to the number of average weekday vehicle trips. For industrial development, the fee of \$337 per 1,000 square feet is calculated using a cost of \$141.54 per vehicle trip multiplied by 2.38 AWVT per 1,000 square feet.

Figure F11: Proposed Fire Impact Fees

Fee Component	Cost per Person	Cost per Trip
Fire Facilities	\$272.78	\$82.42
Fire Apparatus	\$226.83	\$68.54
Development Fee Report	\$2.95	\$1.07
Fire Debt Credit	(\$34.46)	(\$10.49)
Total	\$468.10	\$141.54

Residential Fees per Unit		
Unit Type	Persons per Housing Unit ¹	Proposed Fees
Single Family	2.56	\$1,198
Multi-Family	1.65	\$772

Nonresidential Fees per 1,000 Square Feet		
Development Type	AWVT per 1,000 Sq Ft ¹	Proposed Fees
Industrial	2.38	\$337
Commercial	12.21	\$1,728
Office & Other Services	5.42	\$767
Institutional	7.45	\$1,054

1. See Land Use Assumptions

Projected Revenue from Fire Impact Fees

This section summarizes the potential cash flow to Hendersonville based on adoption of the proposed fire impact fees. The cash flow projections are based on the development projections discussed in the Land Use Assumptions section and the proposed fire impact fees. If development occurs at a more rapid rate than projected, the demand for infrastructure and the impact fee revenue will increase at a corresponding rate. If development occurs at a slower rate than projected, the demand for infrastructure and the impact fee revenue will decrease at a corresponding rate. Projected impact fee revenue equals \$6,233,403 over the next 10 years and total projected expenditures equal \$6,674,400.

Figure F12: Projected Revenue from Fire Impact Fees

Fee Component	Growth Share	Existing Share	Total
Fire Facilities	\$3,633,057	\$0	\$3,633,057
Fire Apparatus	\$3,021,069	\$0	\$3,021,069
Development Fee Report	\$20,274	\$0	\$20,274
Total	\$6,674,400	\$0	\$6,674,400

		Single Family \$1,198 per unit	Multi-Family \$772 per unit	Industrial \$337 per KSF	Commercial \$1,728 per KSF	Office & Other \$767 per KSF	Institutional \$1,054 per KSF
Year		Hsg Unit	Hsg Unit	KSF	KSF	KSF	KSF
Base	2025	21,032	6,106	2,758	3,101	1,908	2,032
Year 1	2026	21,388	6,188	2,770	3,133	1,948	2,065
Year 2	2027	21,743	6,270	2,783	3,165	1,990	2,099
Year 3	2028	22,098	6,353	2,795	3,198	2,032	2,134
Year 4	2029	22,454	6,435	2,807	3,231	2,075	2,169
Year 5	2030	22,809	6,517	2,820	3,264	2,119	2,205
Year 6	2031	23,164	6,600	2,833	3,297	2,164	2,241
Year 7	2032	23,520	6,682	2,845	3,331	2,210	2,278
Year 8	2033	23,875	6,764	2,858	3,365	2,256	2,316
Year 9	2034	24,230	6,847	2,871	3,400	2,304	2,354
Year 10	2035	24,586	6,929	2,883	3,435	2,353	2,393
10-Year Increase		3,553	823	126	334	445	361
Projected Revenue		\$4,256,893	\$635,613	\$42,315	\$576,449	\$341,419	\$380,713

Projected Fee Revenue	\$6,233,403
Total Expenditures	\$6,674,400

POLICE

Methodology

The components of Hendersonville’s police impact fee include facilities, vehicles, and the cost of calculating the police impact fees. Police impact fees are based on the incremental expansion methodology for facilities and vehicles, and the plan-based methodology for the cost of calculating police impact fees. Costs are allocated to both residential and nonresidential development using different demand indicators for each type of development. Residential impact fees are calculated on a per capita basis, then converted to an appropriate amount for each type of housing unit based on persons per housing unit factors. Nonresidential impact fees are calculated using nonresidential vehicle trips. Trip generation rates are highest for commercial/retail development and lowest for industrial development, whereas trip rates for office/institutional development fall between the other two categories. Using vehicle trip rates ensures that impact fees are consistent with the relative demand for police services from nonresidential development.

Proportionate Share

TischlerBise recommends functional population to allocate the cost of police infrastructure to residential and nonresidential development. Functional population is similar to what the U.S. Census Bureau calls "daytime population." This approach accounts for people living and working in a jurisdiction, but it also considers commuting patterns and time spent at home and at nonresidential locations. OnTheMap is a web-based mapping and reporting application that shows where workers are employed and where they live. It describes geographic patterns of jobs by their employment locations and residential locations as well as the connections between the two locations. OnTheMap was developed through a unique partnership between the U.S. Census Bureau and its Local Employment Dynamics (LED) partner states.

Residents that do not work are assigned 20 hours per day to residential development and 4 hours per day to nonresidential development (annualized averages). Residents that work in Hendersonville are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside Hendersonville are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2022 functional population data for Hendersonville, the most recent year available, the cost allocation for residential development is 76 percent while nonresidential development accounts for 24 percent of the demand for police infrastructure.

Figure P1: Functional Population

Demand Units in 2022				
Residential			Demand Hours/Day	Person Hours
Total Population	61,321			
Residents Not Working	31,688		20	633,760
Employed Residents	29,633			
Employed in Hendersonville	3,880		14	54,320
Employed outside Hendersonville	25,753		14	360,542
Residential Subtotal				1,048,622
			Residential Share	76%
Nonresidential				
Non-working Residents	31,688		4	126,752
Jobs Located in Hendersonville	20,667			
Residents Employed in Hendersonville	3,880		10	38,800
Non-Resident Workers (inflow commuters)	16,787		10	167,870
Nonresidential Subtotal				333,422
			Nonresidential Share	24%
Total				1,382,044

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics, Version 6.23.4 (employment).

Service Units

Residential

The “service unit” used for residential development is persons per housing unit (PPHU). This is a measure of, on average, the number of persons residing in each housing unit. As shown in Figure P2, there are 2.56 persons per single family unit and 1.65 persons per multifamily unit. Factors have been calculate based on data provided by the U.S. Census Bureau’s 2023 ACS 5-year estimates (further discussed in Appendix A).

Figure P2: Persons Per Housing Unit (PPHU)

Residential Development per Unit	
Development Type	Persons per Housing Unit ¹
Single Family	2.56
Multi-Family	1.65

1. See Land Use Assumptions

Nonresidential

TischlerBise recommends using nonresidential vehicle trips as the nonresidential service unit for police infrastructure. Average weekday vehicle trip ends for nonresidential development are from the 11th edition of the reference book, *Trip Generation*, published in 2021 by the Institute of Transportation Engineers. A trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). Trip ends for nonresidential development are calculated per thousand square feet.

The basic trip adjustment factor is 50 percent for all nonresidential development except commercial and institutional. For commercial and institutional development, the trip adjustment factor is less than 50 percent because retail uses attract vehicles as they pass by on arterial and collector roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For an average size shopping center, the ITE (2017) indicates that on average 34 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66 percent of attraction trips have the shopping center as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor ($0.66 \times 0.50 = 0.33$) is approximately 33 percent of the trip ends.

Using the current estimates of nonresidential square footage, TischlerBise applies the trip generation rates and adjustment factors to calculate average weekday vehicle trips for nonresidential development in Hendersonville. TischlerBise estimates that there are 69,915 average weekday vehicle trips attributable to existing nonresidential development in Hendersonville.

Figure P3: Current Estimate of Nonresidential Vehicle Trips

Development Type	Dev Unit	ITE Code	Avg Wkday VTE	Trip Adjustment	Adjusted Wkday VTE	2025 Dev Units	2025 Veh Trips
Industrial	KSF	110	4.75	50%	2.38	2,758	6,550
Commercial	KSF	820	37.01	33%	12.21	3,101	37,877
Office & Other Services	KSF	710	10.84	50%	5.42	1,908	10,341
Institutional	KSF	520	22.59	33%	7.45	2,032	15,147
Total Nonresidential Trips							69,915

Police Facilities – Incremental Expansion

Existing Standards and Cost Factors

Hendersonville currently provides 29,373 square feet of police facilities to existing development and plans to maintain the existing level of service by constructing additional police facilities to serve future development. To allocate the proportionate share of demand to residential and nonresidential development, this analysis uses proportionate share factors shown in Figure P1. Hendersonville’s existing LOS for residential development is 0.3337 square feet per person (29,373 square feet X 76 percent residential share / 66,898 persons). The nonresidential level of service is 0.1008 square feet per vehicle trip (29,373 square feet X 24 percent nonresidential share / 69,915 vehicle trips).

Based on recent police station construction costs in Tennessee this analysis uses a construction cost estimate of \$500 per square foot. For police facilities, the cost is \$166.85 per person (0.3337 square feet per person X \$500 per square foot) and \$50.41 per vehicle trip (0.1008 square feet per trip X \$500 per square foot).

Figure P4: Existing Standards for Police Facilities

Description	Square Feet
Police Department	17,740
Police Annex	11,633
Total	29,373

Cost Factors	
Cost per Square Foot	\$500

Level-of-Service (LOS) Standards	
Existing Square Feet	29,373
Residential	
Residential Share	76%
2025 Population	66,898
Square Feet per Person	0.3337
Cost per Person	\$166.85
Nonresidential	
Nonresidential Share	24%
2025 Vehicle Trips	69,915
Square Feet per Vehicle Trip	0.1008
Cost per Vehicle Trip	\$50.41

Source: Hendersonville Police Department

Projected Demand

Hendersonville plans to maintain the existing level of service for police facilities over the next 10 years. Based on a projected population increase of 10,455 persons, future residential development demands approximately 3,489 square feet of police facilities (10,455 additional persons X 0.3337 square feet per person). With projected nonresidential growth of 9,478 vehicle trips, future nonresidential development demands approximately 956 square feet of police facilities (9,478 additional vehicle trips X 0.1008 square feet per vehicle trip). The growth-related cost of police facilities is \$2,222,217 (4,444 square feet X \$500 per square foot).

Figure P5: Growth-Related Need for Police Facilities

Type of Infrastructure	Level of Service	Demand Unit	Cost per Sq Ft
Police Facilities	0.3337 Square Feet	per Person	\$500
	0.1008 Square Feet	per Vehicle	

Demand for Police Facilities					
Year	Population	Vehicle Trips	Square Feet		
			Residential	Nonresidential	Total
2025	66,898	69,915	22,323	7,050	29,373
2026	67,943	70,803	22,672	7,139	29,811
2027	68,989	71,703	23,021	7,230	30,251
2028	70,034	72,616	23,370	7,322	30,692
2029	71,080	73,542	23,719	7,415	31,134
2030	72,125	74,482	24,068	7,510	31,578
2031	73,171	75,436	24,417	7,606	32,023
2032	74,216	76,404	24,766	7,704	32,469
2033	75,262	77,386	25,115	7,803	32,917
2034	76,307	78,382	25,463	7,903	33,367
2035	77,353	79,393	25,812	8,005	33,817
10-Yr Increase	10,455	9,478	3,489	956	4,444
Growth-Related Expenditures			\$1,744,396	\$477,821	\$2,222,217

Police Vehicles – Incremental Expansion

Existing Standards and Cost Factors

Hendersonville currently provides 171 police vehicles to existing development and plans to maintain the existing level of service by acquiring additional vehicles to serve future development. Based on costs provided by the Hendersonville Police Department, the weighted average cost of the existing fleet is \$44,630 per unit. The analysis uses this cost as a proxy for future vehicle costs. To allocate the proportionate share of demand to residential and nonresidential development, this analysis uses proportionate share factors shown in Figure P1. Hendersonville’s existing LOS for residential development is 0.0019 units per person (171 units X 76 percent residential share / 66,898 persons). The nonresidential level of service is 0.0006 units per vehicle trip (171 units X 24 percent nonresidential share / 69,915 vehicle trips). For police vehicles, the cost is \$86.70 per person (0.0019 units per person X \$44,630 per unit) and \$26.20 per vehicle trip (0.0006 units per vehicle trip X \$44,630 per unit).

Figure P6: Existing Standards for Police Vehicles

Description	Units	Unit Cost	Total Cost
SUVs	143	\$45,101	\$6,449,449
Pickup Trucks	11	\$46,860	\$515,460
Sedans	17	\$39,229	\$666,900
Total	171	\$44,630	\$7,631,809

Cost Factors	
Weighted Average per Unit	\$44,630

Level-of-Service (LOS) Standards	
Existing Units	171
Residential	
Residential Share	76%
2025 Population	66,898
Units per Person	0.0019
Cost per Person	\$86.70
Nonresidential	
Nonresidential Share	24%
2025 Vehicle Trips	69,915
Units per Vehicle Trip	0.0006
Cost per Vehicle Trip	\$26.20

Source: Hendersonville Police Department

Projected Demand

Hendersonville plans to maintain the existing level of service for police vehicles over the next 10 years. Based on a projected population increase of 10,455 persons, future residential development demands approximately 20.3 units (10,455 additional persons X 0.0019 units per person). With projected nonresidential growth of 9,478 vehicle trips, future nonresidential development demands approximately 5.6 units (9,478 additional vehicle trips X 0.0006 units per vehicle trip). The growth-related cost of police vehicles is \$1,154,771 (25.9 units X \$44,630 per unit).

Figure P7: Growth-Related Need for Police Vehicles

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Police Vehicles	0.0019 Units	per Person	\$44,630
	0.0006 Units	per Vehicle	

Demand for Police Vehicles					
Year	Population	Vehicle Trips	Units		
			Residential	Nonresidential	Total
2025	66,898	69,915	130.0	41.0	171.0
2026	67,943	70,803	132.0	41.6	173.6
2027	68,989	71,703	134.0	42.1	176.1
2028	70,034	72,616	136.1	42.6	178.7
2029	71,080	73,542	138.1	43.2	181.3
2030	72,125	74,482	140.1	43.7	183.8
2031	73,171	75,436	142.1	44.3	186.4
2032	74,216	76,404	144.2	44.8	189.0
2033	75,262	77,386	146.2	45.4	191.6
2034	76,307	78,382	148.2	46.0	194.2
2035	77,353	79,393	150.3	46.6	196.9
10-Yr Increase	10,455	9,478	20.3	5.6	25.9
Growth-Related Expenditures			\$906,472	\$248,299	\$1,154,771

Impact Fee Study – Plan-Based

The cost to prepare the police impact fee equals \$20,274. TischlerBise recommends that Hendersonville update its report every five years. Based on this cost, proportionate share, and five-year development projections from the Land Use Assumptions in Appendix A, the cost is \$2.95 per person and \$1.07 per vehicle trip.

Figure P8: Impact Fee Study Expense

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Police	\$20,274	Residential	76%	Population	5,228	\$2.95
		Nonresidential	24%	Vehicle Trips	4,567	\$1.07

Proposed Police Impact Fees

Infrastructure components and cost factors used to calculate the proposed police impact fees are summarized in the upper portion of Figure P9. The total capital cost is \$256.50 per person and \$77.68 per vehicle trip.

Police impact fees for residential development are assessed per housing unit and vary proportionately according to the number of persons per housing unit. For a single-family unit, the fee of \$657 is calculated using a cost of \$256.50 per person multiplied by 2.56 persons per housing unit.

Police impact fees for nonresidential development are assessed per 1,000 square feet and vary proportionately according to the number of vehicle trips. For industrial development, the fee of \$185 per 1,000 square feet is calculated using a cost of \$77.68 per vehicle trip multiplied by 2.38 vehicle trips per 1,000 square feet.

Figure P9: Proposed Police Impact Fees

Fee Component	Cost per Person	Cost per Trip
Police Facilities	\$166.85	\$50.41
Police Vehicles	\$86.70	\$26.20
Development Fee Report	\$2.95	\$1.07
Total	\$256.50	\$77.68

Residential Fees per Unit		
Unit Type	Persons per Housing Unit ¹	Proposed Fees
Single Family	2.56	\$657
Multi-Family	1.65	\$423

Nonresidential Fees per 1,000 Square Feet		
Development Type	AWVT per 1,000 Sq Ft ¹	Proposed Fees
Industrial	2.38	\$185
Commercial	12.21	\$948
Office & Other Services	5.42	\$421
Institutional	7.45	\$579

1. See Land Use Assumptions

Projected Revenue from Police Impact Fees

This section summarizes the potential cash flow to Hendersonville based on adoption of the proposed police impact fees. The cash flow projections are based on the development projections discussed in the Land Use Assumptions section and the proposed police impact fees. If development occurs at a more rapid rate than projected, the demand for infrastructure and the impact fee revenue will increase at a corresponding rate. If development occurs at a slower rate than projected, the demand for infrastructure and the impact fee revenue will decrease at a corresponding rate. Projected impact fee revenue equals \$3,418,827 over the next 10 years and total projected expenditures equal \$3,397,262.

Figure P10: Projected Revenue from Police Impact Fees

Fee Component	Growth Share	Existing Share	Total
Police Facilities	\$2,222,217	\$0	\$2,222,217
Police Vehicles	\$1,154,771	\$0	\$1,154,771
Development Fee Report	\$20,274	\$0	\$20,274
Total	\$3,397,262	\$0	\$3,397,262

		Single Family \$657 per unit	Multi-Family \$423 per unit	Industrial \$185 per KSF	Commercial \$948 per KSF	Office & Other \$421 per KSF	Institutional \$579 per KSF
Year		Hsg Unit	Hsg Unit	KSF	KSF	KSF	KSF
Base	2025	21,032	6,106	2,758	3,101	1,908	2,032
Year 1	2026	21,388	6,188	2,770	3,133	1,948	2,065
Year 2	2027	21,743	6,270	2,783	3,165	1,990	2,099
Year 3	2028	22,098	6,353	2,795	3,198	2,032	2,134
Year 4	2029	22,454	6,435	2,807	3,231	2,075	2,169
Year 5	2030	22,809	6,517	2,820	3,264	2,119	2,205
Year 6	2031	23,164	6,600	2,833	3,297	2,164	2,241
Year 7	2032	23,520	6,682	2,845	3,331	2,210	2,278
Year 8	2033	23,875	6,764	2,858	3,365	2,256	2,316
Year 9	2034	24,230	6,847	2,871	3,400	2,304	2,354
Year 10	2035	24,586	6,929	2,883	3,435	2,353	2,393
10-Year Increase		3,553	823	126	334	445	361
Projected Revenue		\$2,334,540	\$348,270	\$23,229	\$316,246	\$187,402	\$209,139

Projected Fee Revenue	\$3,418,827
Total Expenditures	\$3,397,262

TRANSPORTATION

Methodology

The transportation impact fee includes components for street improvements, and the cost of calculating the transportation impact fees. The incremental expansion methodology is used for street improvements, and the plan-based methodology is used for the cost of calculating the transportation impact fees.

Proportionate Share

The transportation impact fees will allocate the cost between residential and nonresidential based on trip generation rates, trip adjustment factors, and trip lengths.

Vehicle Trip Generation Rates and Adjustments

Average weekday vehicle trips are used as a measure of demand by land use. Vehicle trips are estimated using average weekday vehicle trip ends from the reference book, *Trip Generation, 11th Edition*, published by the Institute of Transportation Engineers (ITE) in 2021. A vehicle trip end represents a vehicle entering or exiting a development (as if a traffic counter were placed across a driveway). To calculate the impact fees, trip generation rates are adjusted to avoid double counting each trip at both the origin and destination points. The basic trip adjustment factor is 50 percent. As discussed further below, the impact fee methodology includes additional adjustments to make the fees proportionate to the infrastructure demand for particular types of development.

Residential Trip Generation Rates

For residential development, TischlerBise uses trip generation rates published in Trip Generation, Institute of Transportation Engineers (ITE), 11th Edition (2021). The prototype for single-family development is Single-Family Detached Housing (ITE 210) which generates 9.43 average weekday vehicle trip ends per dwelling unit. The prototype for multi-family development is Multifamily Housing Low-Rise (ITE 220) which generates 6.74 average weekday vehicle trip ends per dwelling unit.

Nonresidential Trip Generation Rates

For nonresidential development, TischlerBise uses trip generation rates published in Trip Generation, Institute of Transportation Engineers, 11th Edition (2021). The prototype for industrial development is Manufacturing (ITE 140) which generates 4.75 average weekday vehicle trip ends per 1,000 square feet of floor area. For office development, the proxy is General Office (ITE 710), and it generates 10.84 average weekday vehicle trip ends per 1,000 square feet of floor area. The prototype for commercial development is Shopping Center (ITE 820) which generates 37.01 average weekday vehicle trips per 1,000 square feet of floor area. For institutional development, the proxy is Government Office (ITE 730), and it generates 22.59 average weekday vehicle trip ends per 1,000 square feet of floor area.

Figure T1: Average Weekday Vehicle Trip Ends by Land Use

ITE Code	Land Use / Size	Demand Unit	Wkdy Trip Ends Per Dmd Unit ¹	Wkdy Trip Ends Per Employee ¹	Employees Per Demand Unit	Square Feet Per Employee
110	Light Industrial	1,000 Sq Ft	4.87	3.10	1.57	637
130	Industrial Park	1,000 Sq Ft	3.37	2.91	1.16	864
140	Manufacturing	1,000 Sq Ft	4.75	2.51	1.89	528
150	Warehousing	1,000 Sq Ft	1.71	5.05	0.34	2,953
254	Assisted Living	bed	2.60	4.24	0.61	na
254	Assisted Living	1,000 Sq Ft	4.19	4.24	0.99	1,012
310	Hotel	room	7.99	14.34	0.56	na
610	Hospital	1,000 Sq Ft	10.77	3.77	2.86	350
710	General Office (avg size)	1,000 Sq Ft	10.84	3.33	3.26	307
720	Medical-Dental Office	1,000 Sq Ft	36.00	8.71	4.13	242
730	Government Office	1,000 Sq Ft	22.59	7.45	3.03	330
750	Office Park	1,000 Sq Ft	11.07	3.54	3.13	320
760	Research & Dev Center	1,000 Sq Ft	11.08	3.37	3.29	304
770	Business Park	1,000 Sq Ft	12.44	4.04	3.08	325
820	Shopping Center (avg size)	1,000 Sq Ft	37.01	17.42	2.12	471

1. Trip Generation, Institute of Transportation Engineers, 11th Edition (2021).

Trip Rate Adjustments

To calculate transportation impact fees, trip generation rates require an adjustment factor to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50 percent. As discussed further in this section, the development fee methodology includes additional adjustments to make the fees proportionate to the infrastructure demand for particular types of development.

Commuter Trip Adjustment

Residential development has a larger trip adjustment factor of 63 percent to account for commuters leaving Hendersonville for work. According to the 2009 National Household Travel Survey (see Table 30) weekday work trips are typically 31 percent of production trips (i.e., all out-bound trips, which are 50 percent of all trip ends). As shown in Figure T2, the U.S. Census Bureau’s OnTheMap web application indicates 87 percent of resident workers traveled outside of Hendersonville for work in 2022. In combination, these factors ($0.31 \times 0.50 \times 0.87 = 0.13$) support the additional 13 percent allocation of trips to residential development.

Figure T2: Commuter Trip Adjustment

Trip Adjustment Factor for Commuters	
Residents Living and Working in Hendersonville	3,880
Residents Commuting Outside Hendersonville for Work	25,753
Employed Residents	29,633
Share of Employed Residents Commuting Outside Hendersonville for Work	87%
Base Production Trips ¹	50%
Additional Production Trips ¹	13%
Residential Trip Adjustment Factor	63%

Source: U.S. Census Bureau, OnTheMap Application (version 6.23.4) and LEHD Origin-Destination Employment Statistics, 2021.

1. According to the National Household Travel Survey (2009)*, published in December 2011 (see Table 30), home-based work trips are typically 30.99 percent of “production” trips, in other words, out-bound trips (which are 50 percent of all trip ends). Also, LED OnTheMap data from 2022 indicate that 87 percent of Hendersonville’s workers travel outside the city for work. In combination, these factors ($0.3099 \times 0.50 \times 0.87 = 0.13$) account for 13 percent of additional production trips. The total adjustment factor for residential includes attraction trips (50 percent of trip ends) plus the journey-to-work commuting adjustment (13 percent of production trips) for a total of 63 percent.

*<http://nhts.ornl.gov/publications.shtml> ; Summary of Travel Trends - Table "Daily Travel Statistics by Weekday vs. Weekend"

Adjustment for Pass-By Trips

For commercial and institutional development, the trip adjustment factor is less than 50 percent because this type of development attracts vehicles as they pass by on arterial and collector roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For the average shopping center, ITE data indicate 34 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66 percent of attraction trips have the commercial site as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 66 percent multiplied by 50 percent, or approximately 33 percent of the trip ends.

Average Weekday Vehicle Trips

Shown below in Figure T3, multiplying average weekday vehicle trip ends and trip adjustment factors by Hendersonville’s existing development units provides the average weekday vehicle trips generated by existing development. As shown below, Hendersonville’s existing development generates 220,792 vehicle trips on an average weekday.

Figure T3: Average Weekday Vehicle Trips by Land Use

Development Type	Dev Unit	ITE Code	Avg Wkdy VTE	Trip Adj	2025 Dev	2025 AWVT
Single Family	HU	210	9.43	63%	21,032	124,952
Multi-Family	HU	221	6.74	63%	6,106	25,925
Industrial	KSF	110	4.75	50%	2,758	6,550
Commercial	KSF	820	37.01	33%	3,101	37,877
Office & Other Services	KSF	820	10.84	50%	1,908	10,341
Institutional	KSF	710	22.59	33%	2,032	15,147
Total						220,792

Vehicle Miles Traveled (VMT)

The analysis uses vehicle miles traveled (VMT) as a measure of demand by land use. Components used to determine VMT include average weekday vehicle trip generation rates, adjustments for commuting patterns and pass-by trips, and trip length weighting factors.

National Average Trip Length

To calculate transportation impact fees, it is necessary to determine the average trip length on Hendersonville’s street network. To do this, the analysis uses national trip generation rates and average trip lengths from the 2022 National Household Travel Survey.

Figure T4: National Average Trip Length

Development Type	National Avg Trip Length
Single Family	13.50
Multi-Family	13.50
Industrial	8.70
Commercial	5.80
Office & Other Services	8.70
Institutional	8.70
Total	

Source: U.S. Department of Transportation, Federal Highway Administration, 2022 National Household Transportation Survey, adjusted for land use

Expected Vehicle Miles Traveled

The national average trip length should be adjusted to reflect actual demand on Hendersonville’s existing street network. To do this, TischlerBise determines expected demand (VMT) on the existing arterial network by multiplying the national average trip lengths by average weekday vehicle trips. Based on this analysis, existing development in Hendersonville generates an expected 2,535,259 VMT.

Figure T5: Expected Vehicle Miles Traveled

Development Type	Avg Weekday Vehicle Trips ¹	National Avg Trip Length ²	Expected VMT ³
Single Family	124,952	13.50	1,686,846
Multi-Family	25,925	13.50	349,994
Industrial	6,550	8.70	56,986
Commercial	37,877	5.80	219,689
Office & Other Services	10,341	8.70	89,968
Institutional	15,147	8.70	131,777
Total			2,535,259

1. TischlerBise estimate from Figure T3
2. 2022 National Household Transportation Study
3. TischlerBise calculation, Average Weekday Vehicle Trips X National Average Trip Length

Actual Vehicle Miles Traveled

The Hendersonville Public Works Department provided average daily trip counts on the existing street network. Multiplying average daily trips for each segment by the segment length provides vehicle miles traveled (VMT) for each segment. Multiplying the segment length by the vehicle capacity of each segment provides vehicle miles of capacity (VMC). The existing arterial network experiences 607,207 VMT and provides 1,181,204 VMC.

Figure T6: Actual Vehicle Miles Traveled

Road	From - To	Class	Length (miles)	Total Lanes	Lane Miles	Capacity per Lane	Vehicle Miles of Capacity	Avg. Daily Traffic Counts	Actual VMT
West Main Street	Mansker Creek - SR386 Interchange Exit 3	Major A	0.80	6	4.80	9,983	47,920	32,218	25,774
West Main Street	SR386 Interchange Exit 3 - Sanders Ferry	Major A	2.38	4	9.52	9,950	94,724	23,359	55,594
East Main Street	Sanders Ferry - Indian Lake Blvd - SR386 ramp/overpass	Major A	0.65	4	2.61	9,950	25,926	30,540	19,894
East Main Street	Indian Lake Blvd - SR386 ramp/overpass	Major A	2.91	4	11.63	9,950	115,762	24,600	71,552
New Shackle Island Road	West Main - Iris	Minor A	1.30	2	2.60	8,850	23,010	13,576	17,649
New Shackle Island Road	Iris - Glenbrook Way	Minor A	1.09	4	4.36	9,950	43,382	29,527	32,184
New Shackle Island Road	Glenbrook Way - Stop Thirty Road	Minor A	0.41	4	1.64	9,950	16,318	29,527	12,106
Center Point Road	West Main - Hunt Lane	Major C	2.15	2	4.30	8,850	38,055	7,736	16,632
Drakes Creek Road	Indian Lake Blvd - Avant	Major C	2.82	2	5.64	8,850	49,914	8,896	25,087
Indian Lake Blvd	East Main - Drakes Creek Road	Major C	2.05	4	8.20	9,950	81,590	18,178	37,265
Old Shackle Island Road	West Main - NSIR	Major C	1.37	2	2.74	8,850	24,249	11,510	15,769
Sanders Ferry Road	East Main - Curtis Crossroads	Major C	3.40	2	6.80	8,850	60,180	10,364	35,238
Walton Ferry Road	West Main Street - Curtis Crossroads	Major C	2.91	2	5.82	8,850	51,507	13,004	37,842
Curtis Crossroads	Walton Ferry - Sanders Ferry	Major C	1.25	2	2.50	8,850	22,125	3,134	3,918
Indian Lake Road	East Main - Lake Terrace	Major C	2.96	2	5.92	8,850	52,392	10,821	32,030
Saundersville Road	Scotch - Indian Lake Blvd	Major C	0.62	2	1.24	8,850	10,974	1,289	799
Saundersville Road	Indian Lake Blvd - SR386 Interchange Exit 8	Major C	1.80	4	7.20	9,950	71,640	10,328	18,590
Saundersville Road	SR386 Interchange Exit 8 - Innsbrook	Major C	0.70	4	2.80	9,950	27,860	13,870	9,709
Saundersville Road	Innsbrook - Cannon Crossing	Major C	1.60	2	3.20	8,850	28,320	13,870	22,192
Stop Thirty Road	NSIR - Jones Lane	Major C	1.86	2	3.72	8,850	32,922	7,355	13,680
Forest Retreat Road	Alexandria Pl - NSIR	Major C	0.95	2	1.90	8,850	16,815	7,190	6,831
*Forest Retreat Road	Boone Holman - Limb Dump	Major C	0.90	2	1.80	8,850	15,930	4,000	3,600
Rockland Road	West Main - Imperial	Major C	1.46	2	2.92	8,850	25,842	11,769	17,183
Imperial Blvd	West Main Street - Sanders Ferry Road	Major C	1.10	2	2.20	8,850	19,470	10,675	11,743
Anderson Lane	East Main - Cumberland Hills Dr	Major C	1.12	2	2.24	8,850	19,824	4,436	4,968
Cumberland Hills Dr	Anderson Ln - East Dr	Major C	2.43	2	4.86	8,850	43,011	4,436	10,779
*East Drive	Indian Lake Rd - Indian Lake Rd	Major C	0.65	2	1.30	8,850	11,505	6,000	3,900
Bonita Parkway	East Main - Cumberland Hills DR	Major C	1.52	2	3.04	8,850	26,904	6,195	9,416
Glenbrook Way	Andrews Run - NSIR	Major C	0.51	4	2.04	9,950	20,298	21,742	11,088
*Caldwell Drive	County Line - Center Point Road	Major C	1.09	2	2.18	8,850	19,293	10,153	11,067
Cages Bend Road	Gaston - Douglas Bend	Major C	1.62	2	3.24	8,850	28,674	5,700	9,234
Freehill Road	Rockland Road - Boone Holman	Major C	0.62	2	1.24	8,850	10,974	4,861	3,014
*Boone Holman	Freehill Road - Forest Retreat	Major C	0.22	2	0.44	8,850	3,894	4,000	880
Total			49.22		126.64		1,181,204	414,859	607,207

Source: Hendersonville Public Works

*Counts estimated based on other comparable roadway volumes and/or prior study volumes

Local Adjustment Factor

Expected VMT reflects anticipated travel demand on the entire roadway system; therefore, it is necessary to calibrate demand. To calibrate demand on the street network, actual travel demand of 602,207 VMT, based on local traffic counts provided by Hendersonville Public Works, is compared to expected travel demand of 2,535,259 VMT. The ratio between actual VMT and expected VMT equals 0.240, and this ratio provides the local adjustment factor used to adjust national average trip lengths by type of land use.

Figure T7: Local Adjustment Factor

Local Adjustment Factor	
Actual VMT	607,207
Expected VMT	2,535,259
Actual to Expected VMT	0.240

Local Trip Lengths

Shown below in Figure T8, TischlerBise applies the local adjustment factor to the national average trip lengths to calculate local trip lengths. The analysis uses local trip lengths shown below to calculate VMT.

Figure T8: Local Trip Lengths

Development Type	National Avg Trip Length	Local Adj Factor	Local Trip Length
Single Family	13.50	0.240	3.23
Multi-Family	13.50	0.240	3.23
Industrial	8.70	0.240	2.08
Commercial	5.80	0.240	1.39
Office & Other Services	8.70	0.240	2.08
Institutional	8.70	0.240	2.08

Source: 2022 NHTS and TischlerBise analysis for local adjustment factor

Local Vehicle Miles Traveled

Multiplying average weekday vehicle trips and local trip lengths by existing development units provides VMT generated by existing development. Existing development generates 607,207 VMT.

Figure T9: Existing VMT by Land Use

Development Type	Dev Unit	ITE Code	Avg Wkdy Veh Trips	Local Trip Length	2025 Dev	2025 VMT
Single Family	HU	210	5.94	3.23	21,032	404,008
Multi-Family	HU	221	4.25	3.23	6,106	83,825
Industrial	KSF	110	2.38	2.08	2,758	13,648
Commercial	KSF	820	12.21	1.39	3,101	52,617
Office & Other Services	KSF	820	5.42	2.08	1,908	21,548
Institutional	KSF	710	7.45	2.08	2,032	31,561
Total						607,207

Street Network Capacity and Usage

As shown in Figure T6, Hendersonville provided an inventory of road segments including segment lengths and lane quantities. The analysis uses average daily traffic counts provided by Hendersonville’s Public Works Department. Multiplying each segment’s length by the number of lanes yields the number of lane miles per segment, and multiplying the traffic counts by the segment lengths provides the average weekday vehicle miles traveled (VMT). Hendersonville’s existing arterial network supports 607,207 VMT on 126.64 lane miles.

Shown below, Figure T10 documents the capacity of Hendersonville’s street network. Based on a total of 1,181,204 vehicle miles of capacity (VMC), the street network provides a capacity of 9,327 vehicles per lane mile, (126.64 lane miles / 1,181,204 VMC). The current daily volume on Hendersonville’s street network is 607,207 VMT. The resulting ratio is 1.95 VMC / VMT (1,181,204 VMC / 607,207 VMT). The baseline VMC / VMT ratio for any incremental expansion method is 1.0 (i.e., VMC = VMT); therefore, the current ratio of 1.95 VMC / VMT exceeds the current LOS ensuring new capacity built with impact fees will not exceed the current LOS.

Figure T10: Arterial Network Capacity and Usage

Arterial Capacity Ratio	
Total Lane Miles	126.64
Vehicle Miles of Capacity	1,181,204
Capacity per Lane Mile	9,327
Vehicle Miles of Travel	607,207
VMT per Lane Mile	4,795
VMC / VMT Ratio	1.95

Projected VMT

Transportation impact fees rely on data pertaining to existing and future average weekday VMT. Multiplying the average weekday VMT rates for new development prototypes by the projection of new residential and nonresidential development provides existing and projected VMT. As shown in Figure T11, existing development generates 602,207 VMT, and projected development generates an additional 96,478 VMT over the next 10 years.

Shown below, Hendersonville currently serves existing development with 126.64 lane miles in its existing street network. To account for excess capacity in the street network, the analysis divides existing arterial lane miles by the VMC / VMT ratio to calculate 65.10 adjusted lane miles (126.64 lane miles / 1.95 VMC per VMT). Hendersonville needs to construct approximately 10.3 lane miles of street improvements over the next 10 years to maintain the existing levels of service.

Figure T11: Projected VMT

Development Type	Dev Unit	ITE Code	Avg Wkdy VTE	Trip Adjustment	Local Trip Length	Avg Wkdy VMT
Single Family	HU	210	9.43	63%	3.23	19.21
Multi-Family	HU	221	6.74	63%	3.23	13.73
Industrial	KSF	110	4.75	50%	2.08	4.95
Commercial	KSF	820	37.01	33%	1.39	16.97
Office & Other Services	KSF	820	10.84	50%	2.08	11.29
Institutional	KSF	710	22.59	33%	2.08	15.53

Hendersonville, Tennessee	Base 2025	1 2026	2 2027	3 2028	4 2029	5 2030	10 2035	10-Year Increase
Single-Family Units	21,032	21,388	21,743	22,098	22,454	22,809	24,586	3,553
Multi-Family Units	6,106	6,188	6,270	6,353	6,435	6,517	6,929	823
Industrial KSF	2,758	2,770	2,783	2,795	2,807	2,820	2,883	126
Commercial KSF	3,101	3,133	3,165	3,198	3,231	3,264	3,435	334
Office & Other Services	1,908	1,948	1,990	2,032	2,075	2,119	2,353	445
Institutional KSF	2,032	2,065	2,099	2,134	2,169	2,205	2,393	361
Single-Family Trips	124,952	127,063	129,174	131,285	133,396	135,507	146,062	21,110
Multi-Family Trips	25,925	26,275	26,625	26,974	27,324	27,673	29,422	3,496
Residential Trips	150,877	153,338	155,798	158,259	160,719	163,180	175,483	24,606
Industrial Trips	6,550	6,579	6,609	6,638	6,668	6,698	6,848	298
Commercial Trips	37,877	38,266	38,659	39,056	39,457	39,862	41,952	4,074
Office & Other Services	10,341	10,560	10,784	11,013	11,246	11,484	12,754	2,413
Institutional Trips	15,147	15,397	15,651	15,909	16,171	16,438	17,839	2,693
Nonresidential Trips	69,915	70,803	71,703	72,616	73,542	74,482	79,393	9,478
Total Vehicle Trips	220,792	224,140	227,501	230,875	234,262	237,662	254,876	34,084
Total VMT	607,207	616,741	626,300	635,883	645,491	655,124	703,685	96,478
Annual Increase		9,534	9,558	9,583	9,608	9,633	9,766	9,766
Actual Lane Miles	126.64	128.6	130.6	132.6	134.6	136.6	146.8	20.1
Annual Increase		2.0	2.0	2.0	2.0	2.0	2.0	2.0
Adjusted Lane Miles	65.10	66.1	67.1	68.2	69.2	70.2	75.4	10.3
Annual Increase		1.0	1.0	1.0	1.0	1.0	1.0	1.0

Capacity Improvements – Incremental Expansion

The transportation impact fee includes a component for construction of additional capacity improvements, and the analysis uses an incremental methodology to maintain the existing level of service for capacity improvements. As shown in Figure T12, the analysis uses VMT to calculate existing level-of-service standards. Hendersonville currently provides 126.6 lane miles of capacity improvements, so the existing level of service is 1.070 lane miles per 10,000 VMT (126.6 lane miles / 1.95 VMC per VMT / (607,207 VMT / 10,000)). As shown in Figure T12, the analysis uses a cost of \$5,269,267 per lane mile, which was provided by Hendersonville’s Public Works Department. For capacity improvements, the cost is \$563.57 per VMT (126.6 lane miles / 1.95 VMC per VMT / 607,207 VMT X \$5,269,267 per lane mile).

Figure T12: Existing Standards for Capacity Improvements

Cost Factors	
Cost per Lane Mile	\$5,269,267

Level-of-Service (LOS) Standards	
Existing Lane Miles	126.6
VMC / VMT Ratio	1.95
Adjusted Lane Miles	64.9
2025 VMT	607,207
Lane Miles per 10,000 VMT	1.070
Cost per VMT	\$563.57

Source: Hendersonville Public Works Department

Development Fee Report – Plan-Based

The cost to prepare the transportation impact fee equals \$27,032. TischlerBise recommends that Hendersonville updates its report every five years. Based on the 5-year cost, proportionate share, and 5-year projections of future development from the *Land Use Assumptions* document, the cost is \$0.56 per VMT.

Figure T13: Impact Fee Study Expense

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Street	\$27,032	All	100%	VMT	47,917	\$0.56

Proposed Transportation Impact Fees

Input variables for the transportation impact fee are shown in the upper section of Figure T14. The total capital cost is \$564.13 per VMT.

Transportation impact fees for residential development are assessed per housing unit and vary proportionately according to the number of VMT per housing unit. For a single-family unit, the fee of \$10,836 is calculated using a cost of \$564.13 per VMT multiplied by 19.21 VMT per housing unit.

Transportation impact fees for nonresidential development are assessed per 1,000 square feet and vary proportionately according to the number of VMT. For industrial development, the fee of \$2,792 per 1,000 square feet is calculated using a cost of \$564.13 per VMT multiplied by 4.95 VMT per 1,000 square feet.

Figure T14: Proposed Transportation Impact Fees

Fee Component	Cost per VMT	
Street Improvements	\$563.57	
Development Fee Report	\$0.56	
Total	\$564.13	

Residential Fees per Unit		
Unit Size	Avg Weekday VMT	Proposed Fees
Single Family	19.21	\$10,836
Multi-Family	13.73	\$7,745

Nonresidential Fees per 1,000 Square Feet		
Development Type	Avg Weekday VMT	Proposed Fees
Industrial	4.95	\$2,792
Commercial	16.97	\$9,571
Office & Other Services	11.29	\$6,371
Institutional	15.53	\$8,763

Projected Revenue from Transportation Impact Fees

This section summarizes the potential cash flow to Hendersonville based on adoption of the proposed transportation impact fees. The cash flow projections are based on the development projections discussed in the Land Use Assumptions section and the proposed transportation impact fees. If development occurs at a more rapid rate than projected, the demand for infrastructure and the impact fee revenue will increase at a corresponding rate. If development occurs at a slower rate than projected, the demand for infrastructure and the impact fee revenue will decrease at a corresponding rate. Projected impact fee revenue equals \$54,425,254 over the next 10 years and total projected expenditures equal \$54,503,556.

Figure T15: Projected Revenue from Transportation Impact Fees

Fee Component	Growth Share	Existing Share	Total
Street Improvements	\$54,503,556	\$0	\$54,503,556
Development Fee Report	\$27,032	\$0	\$27,032
Total	\$54,503,556	\$0	\$54,503,556

		Single Family \$10,836 per unit	Multi-Family \$7,745 per unit	Industrial \$2,792 per sq ft	Commercial \$9,571 per sq ft	Office & Other \$6,371 per sq ft	Institutional \$8,763 per sq ft
Year		Hsg Unit	Hsg Unit	KSF	KSF	KSF	KSF
Base	2025	21,032	6,106	2,758	3,101	1,908	2,032
Year 1	2026	21,388	6,188	2,770	3,133	1,948	2,065
Year 2	2027	21,743	6,270	2,783	3,165	1,990	2,099
Year 3	2028	22,098	6,353	2,795	3,198	2,032	2,134
Year 4	2029	22,454	6,435	2,807	3,231	2,075	2,169
Year 5	2030	22,809	6,517	2,820	3,264	2,119	2,205
Year 6	2031	23,164	6,600	2,833	3,297	2,164	2,241
Year 7	2032	23,520	6,682	2,845	3,331	2,210	2,278
Year 8	2033	23,875	6,764	2,858	3,365	2,256	2,316
Year 9	2034	24,230	6,847	2,871	3,400	2,304	2,354
Year 10	2035	24,586	6,929	2,883	3,435	2,353	2,393
10-Year Increase		3,553	823	126	334	445	361
Projected Revenue		#####	\$6,376,717	\$350,571	\$3,192,821	\$2,835,961	\$3,165,263

Projected Fee Revenue	\$54,425,254
Total Expenditures	\$54,503,556

APPENDIX A: LAND USE ASSUMPTIONS

The City of Hendersonville, Tennessee, retained TischlerBise to analyze the impacts of development on its capital facilities and prepare impact fees based on that analysis. The population, housing unit, and job projections contained in this document provide the foundation for the impact fee study. To evaluate demand for growth-related infrastructure from various types of development, TischlerBise prepared documentation on demand indicators by type of housing unit, jobs and floor area by type of nonresidential development, and average weekday vehicle trip generation rates. These are the service units and demand indicators used in the impact fee study.

Impact fees are based on the need for growth-related improvements, and they must be proportionate by type of land use. The demographic data and development projections are used to demonstrate proportionality and to anticipate the need for future infrastructure. These metrics are used to allocate costs of development equitably among various types of development. To calculate base year estimates, the analysis uses data from the U.S. Census Bureau, Esri Business Analyst, and information from Hendersonville staff. Impact fee studies typically consider a ten-year horizon, with the expectation that fees will be updated every three to five years.

Residential Development

Persons Per Housing Unit

According to the U.S. Census Bureau, a household is a housing unit occupied by year-round residents. Development fees often use per capita standards and persons per housing unit (PPHU) or persons per household (PPH) to derive proportionate share fee amounts. When PPHU is used in the fee calculations, infrastructure standards are derived using year-round population. When PPH is used in the fee calculations, the development fee methodology assumes a higher percentage of housing units will be occupied, thus requiring seasonal or peak population to be used when deriving infrastructure standards. TischlerBise recommends that impact fees for residential development in Hendersonville be imposed according to the number of year-round residents per housing unit. This methodology assumes some portion of the housing stock will be vacant during the year.

Persons per housing unit (PPHU) calculations require data on population and the types of units by structure. Since 2010, the census has not obtained detailed information using a “long-form” questionnaire. Instead, the U.S. Census Bureau uses a continuous monthly mailing of surveys, known as the American Community Survey (ACS), which has limitations due to sample-size constraints. For example, data on detached housing units are now combined with attached single units (commonly known as townhouses). For development fees in Hendersonville, single-family units include detached stick-built units, attached units, and mobile homes. Multi-family units include structures with two or more units, and all other housing units.

Figure A1 below shows the 2019-2023 5-year ACS estimates for Hendersonville. Single-family units averaged 2.56 persons per housing unit (52,188 persons / 20,379 housing units) and multi-family units averaged 1.65 persons per housing unit (9,843 persons / 5,949 housing units). In 2023, Hendersonville’s housing stock averaged 2.36 persons per housing unit. Housing unit estimates from ACS will not equal

decennial census counts of units. These data are used only to derive the custom PPHU factors for each type of unit.

Figure A1: Persons per Housing Unit

Housing Type	Persons	Households	Persons per Household	Housing Units	Persons per Housing Unit	Housing Mix	Vacancy Rate
Single-Family ¹	52,188	19,440	2.68	20,379	2.56	77.4%	4.61%
Multi-Family ²	9,843	5,484	1.79	5,949	1.65	22.6%	7.82%
Total	62,031	24,924	2.49	26,328	2.36	100.0%	5.33%

Source: U.S. Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

1. Includes detached, attached (townhouse), and mobile home units.
2. Includes dwellings in structures with two or more units, RVs, and all other units.

Existing Population and Housing Units

The 2020 Census estimates for Hendersonville include 61,753 persons and 24,963 housing units. By applying the building permit data shown below in Figure A2 to 2020 US Census estimates, TischlerBise estimates the 2025 housing stock includes 27,138 housing units – 21,032 single-family units and 6,106 multi-family units. The analysis converts housing units to population using the occupancy factors shown in Figure A1. The 2025 population estimate is 66,898 persons.

Figure A2: Recent Historical Housing Permit Data

Residential Construction Trends			
Year	Single Family	Multifamily	Total Units
2019	422	29	451
2020	321	0	321
2021	456	138	594
2022	384	80	464
2023	264	247	511
2024	285	0	285
Total	2,132	494	2,626
Annual Average	355	82	438

Projected Population and Housing Units

To project future population growth, the analysis uses the residential construction data shown in Figure A2. This results in an estimated total increase of 4,377 housing units by 2035. To project future population, the analysis holds the occupancy rate factors in Figure A1 constant throughout the 10-year time horizon. Applying the PPHU factors to the projected housing unit increase results in an estimated increase of 10,455 persons over the next ten years.

Figure A3: Residential Development Projections

Hendersonville, Tennessee	2025	2026	2027	2028	2029	2030	2035	10-Year Increase
	Base Year	1	2	3	4	5	10	
Population	66,898	67,943	68,989	70,034	71,080	72,125	77,353	10,455
Housing Units								
Single Family	21,032	21,388	21,743	22,098	22,454	22,809	24,586	3,553
Multi-Family	6,106	6,188	6,270	6,353	6,435	6,517	6,929	823
Total	27,138	27,576	28,013	28,451	28,889	29,326	31,515	4,377

Nonresidential Development

In addition to data on residential development, the calculation of development impact fees requires data on nonresidential development. TischlerBise uses the term jobs to refer to employment by place of work. In Figure A4, gray shading indicates the nonresidential development prototypes used by TischlerBise to derive nonresidential floor area and average weekday vehicle trips.

The prototype for industrial development is Manufacturing (ITE 140) with an average of 528 square feet of floor area per employee. For office & other services development, the proxy is General Office (ITE 710) with an average of 307 square feet of floor area per employee. Institutional development uses Government Office (ITE 730) with an average of 350 square feet of floor area per employee. The prototype for commercial development is Shopping Center (ITE 820) with an average of 471 square feet of floor area per employee.

Figure A4: Nonresidential Demand Units

ITE Code	Land Use / Size	Demand Unit	Wkdy Trip Ends Per Dmd Unit ¹	Wkdy Trip Ends Per Employee ¹	Employees Per Demand Unit	Square Feet Per Employee
110	Light Industrial	1,000 Sq Ft	4.87	3.10	1.57	637
130	Industrial Park	1,000 Sq Ft	3.37	2.91	1.16	864
140	Manufacturing	1,000 Sq Ft	4.75	2.51	1.89	528
150	Warehousing	1,000 Sq Ft	1.71	5.05	0.34	2,953
254	Assisted Living	bed	2.60	4.24	0.61	na
254	Assisted Living	1,000 Sq Ft	4.19	4.24	0.99	1,012
310	Hotel	room	7.99	14.34	0.56	na
610	Hospital	1,000 Sq Ft	10.77	3.77	2.86	350
710	General Office (avg size)	1,000 Sq Ft	10.84	3.33	3.26	307
720	Medical-Dental Office	1,000 Sq Ft	36.00	8.71	4.13	242
730	Government Office	1,000 Sq Ft	22.59	7.45	3.03	330
750	Office Park	1,000 Sq Ft	11.07	3.54	3.13	320
760	Research & Dev Center	1,000 Sq Ft	11.08	3.37	3.29	304
770	Business Park	1,000 Sq Ft	12.44	4.04	3.08	325
820	Shopping Center (avg size)	1,000 Sq Ft	37.01	17.42	2.12	471

1. Trip Generation, Institute of Transportation Engineers, 11th Edition (2021).

Existing Employment and Floor Area

TischlerBise obtains 2024 employment estimates for Hendersonville from Esri Business Analyst. To estimate floor area, the analysis multiplies each sector’s employment total by the employment density factors shown in Figure A4. For 2024, total employment equals 23,861 jobs and estimated floor area equals 9,682,706 square feet.

Figure A5: Existing Nonresidential Development

Nonresidential Category	2024 Jobs ¹	Percent of Total Jobs	Square Feet per Job ²	2024 Estimated Floor Area ³
Industrial ⁴	5,196	22%	528	2,745,676
Commercial ⁵	6,522	27%	471	3,069,798
Office & Other Services ⁶	6,082	25%	307	1,868,363
Institutional ⁷	6,061	25%	330	1,998,869
Total	23,861	100%		9,682,706

1. Esri Business Analyst Online, Business Summary, 2024.
2. Trip Generation, Institute of Transportation Engineers, 11th Edition (2021).
3. TischlerBise calculation (2024 jobs X square feet per job).
4. Major sectors are Construction; Manufacturing.
5. Major sectors are Retail; Accommodation & Food Services.
6. Major sectors are Other Services; Professional, Scientific & Tech Services.
7. Major sectors are Educational Services; Health Care & Social Assistance.

Projected Employment and Floor Area

The analysis uses employment and floor area projections to illustrate the possible future pace of service demands, revenues, and expenditures. To the extent these factors change, the projected need for infrastructure will also change. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase at a corresponding rate. If development occurs at a slower rate than projected, the demand for infrastructure will also decrease.

The projections are based on compound annual growth rates for Industrial, Commercial and Office & Institutional jobs, which were derived from the Nashville Area Metropolitan Planning Organization’s job estimates for Sumner County in 2017 and 2045. The MPO estimates Industrial jobs will grow by 0.45% per year, Commercial jobs by 1.03% per year, Office & Other Services jobs by 2.12% per year, and Institutional Jobs by 1.65% per year. These growth rates were then applied to the 2024 ESRI job figures to produce estimates for 2025 through 2035. Nonresidential floor area growth was calculated by applying the employee density factors shown in Figure A4 to the growth in jobs.

Based on these assumptions, the 10-year projections include an increase of 3,435 jobs and approximately 1.25 million square feet of nonresidential development in Hendersonville.

Figure A6: Nonresidential Development Projections

Hendersonville, Tennessee	2025 Base Year	2026 1	2027 2	2028 3	2029 4	2030 5	2035 10	10-Year Increase
Employment								
Industrial	5,219	5,242	5,266	5,289	5,313	5,337	5,457	237
Commercial	6,589	6,657	6,725	6,794	6,864	6,934	7,298	702
Office & Other Services	6,211	6,343	6,477	6,614	6,754	6,897	7,660	1,419
Institutional	6,161	6,263	6,366	6,471	6,578	6,686	7,256	1,077
Total	24,180	24,504	24,834	25,169	25,509	25,855	27,671	3,435
Nonres. Floor Area								
Industrial	2,757,927	2,770,234	2,782,595	2,795,011	2,807,483	2,820,010	2,883,490	125,005
Commercial	3,101,321	3,133,168	3,165,342	3,197,846	3,230,684	3,263,859	3,434,915	330,202
Office & Other Services	1,907,956	1,948,388	1,989,677	2,031,840	2,074,897	2,118,867	2,353,092	435,899
Institutional	2,031,845	2,065,364	2,099,437	2,134,072	2,169,278	2,205,065	2,393,052	355,346
Total	9,799,050	9,917,154	10,037,050	10,158,769	10,282,342	10,407,801	11,064,549	1,246,452

Development Projections

Provided below is a summary of Citywide development projections used in the impact fee study. Base year estimates for 2025 are used in the impact fee calculations. Development projections are used to illustrate a possible future pace of demand for service units and cash flows resulting from revenues and expenditures associated with those demands.

Figure A7: Development Projections Summary

Hendersonville, Tennessee	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	10-Year Increase
	Base Year	1	2	3	4	5	6	7	8	9	10	
Population	66,898	67,943	68,989	70,034	71,080	72,125	73,171	74,216	75,262	76,307	77,353	10,455
Housing Units												
Single Family	21,032	21,388	21,743	22,098	22,454	22,809	23,164	23,520	23,875	24,230	24,586	3,553
Multi-Family	6,106	6,188	6,270	6,353	6,435	6,517	6,600	6,682	6,764	6,847	6,929	823
Total	27,138	27,576	28,013	28,451	28,889	29,326	29,764	30,202	30,639	31,077	31,515	4,377
Employment												
Industrial	5,219	5,242	5,266	5,289	5,313	5,337	5,360	5,384	5,408	5,433	5,457	238
Commercial	6,589	6,657	6,725	6,794	6,864	6,934	7,006	7,077	7,150	7,224	7,298	709
Office & Other Services	6,211	6,343	6,477	6,614	6,754	6,897	7,044	7,193	7,345	7,501	7,660	1,449
Institutional	6,161	6,263	6,366	6,471	6,578	6,686	6,797	6,909	7,023	7,138	7,256	1,095
Total	24,180	24,504	24,834	25,169	25,509	25,855	26,206	26,563	26,926	27,296	27,671	3,491
Nonres. Sq. Ft. (x1,000)												
Industrial	2,758	2,770	2,783	2,795	2,807	2,820	2,833	2,845	2,858	2,871	2,883	126
Commercial	3,101	3,133	3,165	3,198	3,231	3,264	3,297	3,331	3,365	3,400	3,435	334
Office & Other Services	1,908	1,948	1,990	2,032	2,075	2,119	2,164	2,210	2,256	2,304	2,353	445
Institutional	2,032	2,065	2,099	2,134	2,169	2,205	2,241	2,278	2,316	2,354	2,393	361
Total	9,799	9,917	10,037	10,159	10,282	10,408	10,535	10,665	10,796	10,929	11,065	1,265

APPENDIX B: LAND USE DEFINITIONS

Residential Development

As discussed below, residential development categories are based on data from the U.S. Census Bureau, American Community Survey. Hendersonville will collect impact fees from all new residential units. One-time impact fees are determined by site capacity (i.e., number of residential units).

Single-Family:

1. Single-family detached is a one-unit structure detached from any other house, that is, with open space on all four sides. Such structures are considered detached even if they have an adjoining shed or garage. A one-family house that contains a business is considered detached as long as the building has open space on all four sides.
2. Single-family attached (townhouse) is a one-unit structure that has one or more walls extending from ground to roof separating it from adjoining structures. In row houses (sometimes called townhouses), double houses, or houses attached to nonresidential structures, each house is a separate, attached structure if the dividing or common wall goes from ground to roof.
3. Mobile home includes both occupied and vacant mobile homes, to which no permanent rooms have been added, are counted in this category. Mobile homes used only for business purposes or for extra sleeping space and mobile homes for sale on a dealer's lot, at the factory, or in storage are not counted in the housing inventory.

Multi-Family:

1. 2+ units (duplexes and apartments) are units in structures containing two or more housing units, further categorized as units in structures with "2, 3 or 4, 5 to 9, 10 to 19, 20 to 49, and 50 or more apartments."
2. Boat, RV, Van, etc. includes any living quarters occupied as a housing unit that does not fit the other categories (e.g., houseboats, railroad cars, campers, and vans). Recreational vehicles, boats, vans, railroad cars, and the like are included only if they are occupied as a current place of residence.

Nonresidential Development

The proposed general nonresidential development categories (defined below) can be used for all new construction within Hendersonville. Nonresidential development categories represent general groups of land uses that share similar average weekday vehicle trip generation rates and employment densities (i.e., jobs per thousand square feet of floor area).

Commercial: Establishments primarily selling merchandise, eating/drinking places, and entertainment uses. By way of example, *Commercial* includes shopping centers, supermarkets, pharmacies, restaurants, bars, nightclubs, automobile dealerships, and movie theaters.

Industrial: Establishments primarily engaged in the production, transportation, or storage of goods. By way of example, *Industrial* includes manufacturing plants, distribution warehouses, trucking companies, utility substations, power generation facilities, and telecommunications buildings.

Institutional: Public and quasi-public buildings providing educational, social assistance, or religious services. By way of example, *Institutional* includes schools, universities, churches, daycare facilities, hospitals, and government buildings.

Office: Establishments providing management, administrative, professional, or business services. By way of example, *Office* includes banks, business offices, medical offices, and veterinarian clinics.

Impact fee Report

Prepared for:
Hendersonville, Tennessee

January 26, 2024



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EXECUTIVE SUMMARY

In 2023, the City of Hendersonville retained TischlerBise to analyze the impacts of future development on park facilities and to calculate impact fees based on that analysis. Through interviews and discussions with staff, TischlerBise developed the proposed impact fees discussed in this report. Impact fees are collected from new construction at the time a building permit is issued and used to construct system improvements needed to accommodate future development. An impact fee represents future development's proportionate share of capital facility needs. Impact fees do have limitations and should not be regarded as the total solution for infrastructure funding needs. Rather, they are one component of a comprehensive portfolio to ensure provision of adequate public facilities needed to serve future development. In contrast to general taxes, impact fees may not be used for operations, maintenance, replacement of infrastructure, or correcting existing deficiencies.

The City of Hendersonville has experienced steady residential growth in recent years, and this growth is expected to continue in the future. As a result, Hendersonville must plan for future park improvements if existing levels of service are to be maintained.

TENNESSEE LEGAL FRAMEWORK

While the State of Tennessee does not have specific authorizing legislation for impact fees, the State does grant the power for municipalities with a mayor-aldermanic charter to impose impact fees on new development. As a mayor-aldermanic charter city, the City of Hendersonville may:

"Establish, open, relocate, vacate, alter, widen, extend, grade, improve, repair, construct, reconstruct, maintain, light, sprinkle and clean public highways, streets, boulevards, parkways, sidewalks, alleys, parks, public grounds, public facilities, libraries and squares, wharves, bridges, viaducts, subways, tunnels, sewers and drains within or without the corporate limits, regulate their use within the corporate limits, assess fees for the use of or impact upon such property and facilities, and take and appropriate property therefor under § 7-31-107 -- 7-31-111 and § 29-16-203, or any other manner provided by general laws." (Tenn. Code Ann. § 6-2-201 (15))

GENERAL LEGAL FRAMEWORK

Both state and federal courts have recognized the imposition of impact fees as a legitimate form of land use regulation, provided the fees meet standards intended to protect against regulatory takings. Land use regulations, development exactions, and impact fees are subject to the Fifth Amendment prohibition on taking of private property for public use without just compensation. To comply with the Fifth Amendment, development regulations must be shown to substantially advance a legitimate governmental interest. In the case of impact fees, that interest is in the protection of public health, safety, and welfare by ensuring development is not detrimental to the quality of essential public services. The means to this end are also important, requiring both procedural and substantive due process. The process followed to receive community input (i.e., stakeholder meetings, work sessions, and public hearings) provides opportunities for comments and refinements to the impact fees.

There is little federal case law specifically dealing with impact fees, although other rulings on other types of exactions (e.g., land dedication requirements) are relevant. In one of the most important exaction cases, the U. S. Supreme Court found that a government agency imposing exactions on development must demonstrate an "essential nexus" between the exaction and the interest being protected (see *Nollan v.*

California Coastal Commission, 1987). In a more recent case (*Dolan v. City of Tigard, OR*, 1994), the Court ruled that an exaction must also be “roughly proportional” to the burden created by development. However, the *Dolan* decision appeared to set a higher standard of review for mandatory dedications of land than for monetary exactions such as impact fees.

There are three reasonable relationship requirements for impact fees that are closely related to “rational nexus”, or “reasonable relationship” requirements enunciated by a number of state courts. Although the term “dual rational nexus” is often used to characterize the standard by which courts evaluate the validity of impact fees under the U.S. Constitution, we prefer a more rigorous formulation that recognizes three elements: “need,” “benefit,” and “proportionality.” The dual rational nexus test explicitly addresses only the first two, although proportionality is reasonably implied, and was specifically mentioned by the U.S. Supreme Court in the *Dolan* case. Individual elements of the nexus standard are discussed further in the following paragraphs.

All new development in a community creates additional demands on some, or all, public facilities provided by local government. If the capacity of facilities is not increased to satisfy that additional demand, the quality or availability of public services for the entire community will deteriorate. Impact fees may be used to recover the cost of development-related facilities, but only to the extent that the need for facilities is a consequence of development that is subject to the fees. The *Nollan* decision reinforced the principle that development exactions may be used only to mitigate conditions created by the developments upon which they are imposed. That principle clearly applies to impact fees. In this study, the impact of development on infrastructure needs is analyzed in terms of quantifiable relationships between various types of development and the demand for specific capital facilities, based on applicable level-of-service standards.

The requirement that exactions be proportional to the impacts of development was clearly stated by the U.S. Supreme Court in the *Dolan* case and is logically necessary to establish a proper nexus. Proportionality is established through the procedures used to identify development-related facility costs, and in the methods used to calculate impact fees for various types of facilities and categories of development. The demand for capital facilities is measured in terms of relevant and measurable attributes of development (e.g., a typical housing unit’s average weekday vehicle trips).

A sufficient benefit relationship requires that impact fee revenues be segregated from other funds and expended only on the facilities for which the fees were charged. Impact fees must be expended in a timely manner and the facilities funded by the fees must serve the development paying the fees. However, nothing in the U.S. Constitution or the state enabling legislation requires that facilities funded with fee revenues be available *exclusively* to development paying the fees. In other words, benefit may extend to a general area including multiple real estate developments. Procedures for the earmarking and expenditure of fee revenues are discussed near the end of this study. All of these procedural as well as substantive issues are intended to ensure that new development benefits from the impact fees they are required to pay. The authority and procedures to implement impact fees is separate from and complementary to the authority to require improvements as part of subdivision or zoning review.

As documented in this report, the City of Hendersonville has complied with applicable legal precedents. Impact fees are proportionate and reasonably related to the capital improvement demands of new development. Specific costs have been identified using local data and current dollars. With input from City

staff, TischlerBise identified demand indicators for each type of infrastructure and calculated proportionate share factors to allocate costs by type of development. This report documents the formulas and input variables used to calculate the impact fees for each type of public facility. Impact fee methodologies also identify the extent to which new development is entitled to various types of credits to avoid potential double payment of growth-related capital costs.

GENERAL METHODOLOGIES

There are three general methodologies for calculating impact fees. The choice of a particular methodology depends primarily on the timing of infrastructure construction (past, concurrent, or future) and service characteristics of the facility type being addressed. Each methodology has advantages and disadvantages in a particular situation, and can be used simultaneously for different cost components.

Reduced to its simplest terms, the process of calculating impact fees involves two main steps: (1) determining the cost of development-related capital improvements and (2) allocating those costs equitably to various types of development. In practice, though, the calculation of impact fees can become quite complicated because of the many variables involved in defining the relationship between development and the need for facilities within the designated service area. The following paragraphs discuss three basic methodologies for calculating impact fees and how those methodologies can be applied.

Cost Recovery (Past Improvements)

The rationale for recoupment, often called cost recovery, is that future development is paying for its share of the useful life and remaining capacity of facilities already built, or land already purchased, from which future development will benefit. This methodology is often used for utility systems that must provide adequate capacity before future development can take place.

Incremental Expansion (Concurrent Improvements)

The incremental expansion methodology documents current level-of-service (LOS) standards for each type of public facility, using both quantitative and qualitative measures. This approach assumes there are no deficiencies or surplus capacity in existing infrastructure, and future development is paying only its proportionate share for growth-related infrastructure. Revenue will be used to expand or provide additional facilities, as needed, to accommodate future development. An incremental expansion cost methodology is best suited for public facilities that will be expanded in regular increments to keep pace with development.

Plan-Based (Future Improvements)

The plan-based methodology allocates costs for a specified set of improvements to a specified amount of development. Improvements are typically identified in a long-range facility plan and development potential is identified by a land use plan. There are two options for determining the cost per demand unit: (1) total cost of a public facility can be divided by total demand units (average cost), or (2) the growth-share of the public facility cost can be divided by the net increase in demand units over the planning timeframe (marginal cost).

CONCEPTUAL IMPACT FEE CALCULATION

In contrast to project-level improvements, impact fees fund growth-related infrastructure that will benefit multiple development projects, or the entire jurisdiction (referred to as system improvements). The first step is to determine an appropriate demand indicator for the particular type of infrastructure. The demand indicator measures the number of demand units for each unit of development. For example, an appropriate indicator of the demand for park facilities is population growth, and the increase in population can be estimated from the average number of residents per housing unit. The second step in the impact fee formula is to determine infrastructure units per demand unit, typically called level-of-service (LOS) standards. In keeping with the parks example, a common LOS standard is park amenities per resident. The third step in the impact fee formula is the cost of various infrastructure units. To complete the parks example, this part of the formula would establish the cost for purchasing and/or constructing new park amenities.

CREDITS

Regardless of the methodology, a consideration of credits is integral to the development of a legally defensible impact fee. There are two types of credits that should be addressed in impact fee studies and ordinances. The first is a revenue credit due to possible double payment situations, which could occur when other revenues may contribute to the capital costs of infrastructure covered by the impact fee. This type of credit is integrated into the fee calculation, thus reducing the fee amount. The second is a site-specific credit or developer reimbursement for dedication of land or construction of system improvements. An example would be if a developer builds a park with improvements and dedicates to the City. This type of credit is addressed in the administration and implementation of the development fee program. For ease of administration, TischlerBise normally recommends developer reimbursements for system improvements.

PROPOSED FEE METHODOLOGIES AND COST COMPONENTS

Shown below, Figure 1 summarizes the methodology and cost allocation components used for Hendersonville’s parks impact fee report. Costs were allocated only to residential development, as nonresidential development generated negligible demand for park facilities. Population was used as the cost allocation factor.

Figure 1: Proposed Impact fee Methodologies and Cost Components

Infrastructure Category	Service Area	Cost Recovery	Incremental Expansion	Plan-Based	Cost Allocation
Parks	Citywide	N/A	Park Land, Park Improvements	N/A	Population

IMPACT FEE SCHEDULE

Impact fees for residential development will be assessed per dwelling unit, based on the type of unit. The fees shown in Figures 2 represent the maximum allowable impact fees – the proposed impact fees fund 100 percent of growth-related park infrastructure. Hendersonville may adopt impact fees that are less than the amounts shown; however, a reduction in impact fee revenue will necessitate an increase in other revenues, a decrease in planned capital improvements and/or a decrease in Hendersonville’s LOS standards. All costs in the impact fee study are in current dollars with no assumed inflation rate over time. If cost estimates change significantly over time, impact fees should be recalculated.

Figure 2: Maximum Allowable Impact fees

Residential Development	Fees per Unit	
Development Type	Persons per Housing Unit ¹	Proposed Fees
Single Family	2.63	\$7,197
Multi-Family	1.78	\$4,871

1. See Land Use Assumptions

A note on rounding: Calculations throughout this report are based on an analysis conducted using Excel software. Most results are discussed in the report using one-, two-, and three-digit places, which represent rounded figures. However, the analysis itself uses figures carried to their ultimate decimal places; therefore, the sums and products generated in the analysis may not equal the sum or product if the reader replicates the calculation with the factors shown in the report (due to the rounding of figures shown, not in the analysis).

PARKS IMPACT FEES

METHODOLOGY

The Parks impact fee includes components for park land and park improvements. Parks impact fees use the incremental expansion methodology. Costs are allocated only to residential development using persons per housing unit to allocate costs.

PROPORTIONATE SHARE

TischlerBise recommends allocating 100 percent of the cost of parks infrastructure to residential development since nonresidential development generates negligible demand for parks infrastructure.

DEMAND UNITS

Residential impact fees are calculated on a per capita basis, then converted to an appropriate amount for each type of housing unit based on the number of persons per housing unit (PPHU). As shown in Figure PR1, the current PPHU factors are 2.63 persons per single-family unit and 1.78 persons per multi-family unit. These factors are based on the U.S. Census Bureau's 2017-2021 American Community Survey 5-year estimates (further discussed in Appendix A).

Figure PR1: Demand Units

Development Type	Persons per Housing Unit ¹
Single Family	2.63
Multi-Family	1.78

Source: U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates

1. Single-Family includes detached, attached (i.e. townhouses)

PARK LAND – INCREMENTAL EXPANSION

As shown below in Figure PR2, the City of Hendersonville has 514 acres of existing park land. In order to maintain existing levels of service the City plans to expand its current inventory of park land to serve future development. To determine the existing level of service, the current land inventory is compared to the current number of residents in the City. This results in a level of service of 0.0079 acres per person (514 acres X 100 percent residential share / 65,059 persons).

The cost of an acre of land is estimated at \$275,000, based on an estimate provided by the City. For park land, the cost per demand unit is \$2,172.65 per person (0.0079 acres per person X \$275,000 per acre).

Figure PR2: Park Land Level of Service

Description	Acres
Batey Farm	75
Drakes Creek Park	135
Mallard Point Boat Launch	4
Memorial Park	44
Rugby Park	13
Sander Ferry Park	70
Veterens Park	28
Volunteer Park	45
Warrior Bike Trail	24
Durham Farm Parkland	76
Total	514

Cost Allocation Factors	
Cost per Acre	\$275,000

Level-of-Service (LOS) Standards	
Existing Acres	514
Residential	
Residential Share	100%
2023 Population	65,059
Acres per Person	0.0079
Cost per Person	\$2,172.65

Source: Hendersonville, Tennessee

PARK IMPROVEMENTS – INCREMENTAL EXPANSION

As shown in Figure PR3 below, City of Hendersonville parks contain 142 improvements. The City plans to expand its current inventory of 142 park improvements to serve future development. The analysis allocates 100 percent of demand for park improvements to residential development. Hendersonville’s existing level of service is 0.0022 improvements per person (142 improvements X 100 percent residential share / 65,059 persons).

Based on the total replacement cost of \$36,687,141 for Hendersonville’s existing 142 park improvements, the average replacement cost is \$259,273 per improvement. For park improvements, the cost per demand unit is \$563.91 per person (0.0022 improvements per person X \$259,273 per improvement).

Figure PR3: Park Improvements Level of Service

Description	Improvements	Unit Cost	Replacement Cost
Concession Stand	8	\$391,597	\$3,132,773
Boat/Kayak Access	2	\$48,680	\$97,360
Fishing Pier	2	\$53,505	\$107,010
Disc Golf Course	1	\$16,038	\$16,038
Playground	11	\$261,214	\$2,873,359
Football Field	1	\$315,618	\$315,618
Baseball / Softball Field	16	\$237,743	\$3,803,881
Batting Cage	5	\$51,198	\$255,988
Basketball Court	1	\$15,000	\$15,000
Lacrosse Field	2	\$1,286	\$2,572
Soccer Field	24	\$618,529	\$14,535,424
Multi-Purpose Field	3	\$200,000	\$600,000
Tennis / Pickleball	12	\$126,612	\$1,519,339
In-line Hockey Rink	2	\$2,000,000	\$4,000,000
Sand Volleyball	3	\$10,000	\$30,000
Picnic Shelters	21	\$102,384	\$2,150,054
Charcoal Grill	10	\$500	\$5,000
Skate Park	1	\$130,178	\$130,178
Dog Park	1	\$39,097	\$39,097
Model Airplane Field	1	\$28,591	\$28,591
Maintenance Facility	1	\$243,883	\$243,883
Restroom Facility	14	\$198,998	\$2,785,976
Total	142	\$259,273	\$36,687,141

Cost Allocation Factors	
Cost per Improvement	\$259,273

Level-of-Service (LOS) Standards	
Existing Improvements	142
Residential	
Residential Share	100%
2023 Population	65,059
Improvements per Person	0.0022
Cost per Person	\$563.91

Source: Hendersonville, Tennessee

PROJECTED DEMAND FOR GROWTH-RELATED PARKS INFRASTRUCTURE

Park Land

To accommodate projected development over the next ten years, Hendersonville will acquire additional park land as development occurs. Figure PR4 forecasts growth-related demand for park improvements. Hendersonville’s population is projected to increase by 11,127 persons by 2033. Using the 2023 LOS, future residential development will demand approximately 88 additional park acres (11,127 additional persons X 0.0079 acres per person). Based on demand for 88 park acres and a cost of \$275,000 per acre, the growth-related expenditure on park improvements is \$24,175,912.

Figure PR4: Growth-Related Demand for Park Land

Type of Infrastructure	Level of Service		Demand Unit	Cost per Acre
Park Land	0.0079	Acres	per Person	\$275,000

Demand for Park Land		
Year	Population	Acres
2023	65,059	514
2024	66,172	523
2025	67,284	532
2026	68,397	540
2027	69,510	549
2028	70,623	558
2029	71,735	567
2030	72,848	576
2031	73,961	584
2032	75,074	593
2033	76,186	602
10-Yr Increase	11,127	88

Growth-Related Expenditures	\$24,175,912
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Park Improvements

To accommodate projected development over the next ten years, Hendersonville will construct additional park improvements as development occurs. Figure PR5 forecasts growth-related demand for park improvements. Hendersonville’s population is projected to increase by 11,127 persons by 2033. Using the 2023 LOS, future residential development will demand approximately 24.2 additional park improvements (11,127 additional persons X 0.0022 improvements per person). Based on demand for 24.2 park improvements and an average cost of \$259,273 per improvement, the growth-related expenditure on park improvements is \$6,274,815.

Figure PR5: Growth-Related Demand for Park Improvements

Type of Infrastructure	Level of Service		Demand Unit	Cost per Unit
Park Improvements	0.0022	Units	per Person	\$259,273

Demand for Park Amenities		
Year	Population	Units
2023	65,059	141.5
2024	66,172	143.9
2025	67,284	146.3
2026	68,397	148.8
2027	69,510	151.2
2028	70,623	153.6
2029	71,735	156.0
2030	72,848	158.4
2031	73,961	160.9
2032	75,074	163.3
2033	76,186	165.7
10-Yr Increase	11,127	24.2

Growth-Related Expenditures	\$6,274,815
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MAXIMUM ALLOWABLE PARKS IMPACT FEES

Infrastructure components and cost factors used to calculate maximum allowable Parks impact fees are summarized in the upper portion of Figure PR6. Residential impact fees are calculated using a cost of \$2,736.55 per person and the average number of persons per housing unit. For a single-family unit, the fee of \$7,197 is calculated using a cost of \$2,736.55 per person multiplied by 2.63 persons per housing unit.

Figure PR6: Maximum Allowable Parks Impact fees

Fee Component	Cost per Person
Park Land	\$2,172.65
Park Improvements	\$563.91
Total	\$2,736.55

Residential Development	Fees per Unit	
Development Type	Persons per Housing Unit ¹	Proposed Fees
Single Family	2.63	\$7,197
Multi-Family	1.78	\$4,871

1. See Land Use Assumptions

PROJECTED PARKS IMPACT FEE REVENUE

Revenue projections assume implementation of the maximum allowable Parks impact fees and that development over the next ten years is consistent with the development projections in Appendix A. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue. As shown in Figure PR7, projected fee revenue equals approximately \$30 million over the next ten years compared to projected expenditures of approximately \$30 million.

Figure PR7: Projected Parks Impact fee Revenue

Fee Component	Growth Share	Existing Share	Total
Park Land	\$24,175,912	\$0	\$24,175,912
Park Improvements	\$6,274,815	\$0	\$6,274,815
Total	\$30,450,726	\$0	\$30,450,726

		Single Family \$7,197 per unit	Multi-Family \$4,871 per unit
Year		Hsg Unit	Hsg Unit
Base	2023	19,799	6,421
Year 1	2024	20,063	6,655
Year 2	2025	20,328	6,889
Year 3	2026	20,593	7,123
Year 4	2027	20,857	7,357
Year 5	2028	21,122	7,592
Year 6	2029	21,387	7,826
Year 7	2030	21,652	8,060
Year 8	2031	21,916	8,294
Year 9	2032	22,181	8,528
Year 10	2033	22,446	8,762
10-Year Increase		2,647	2,340
Projected Revenue		\$19,050,813	\$11,399,913

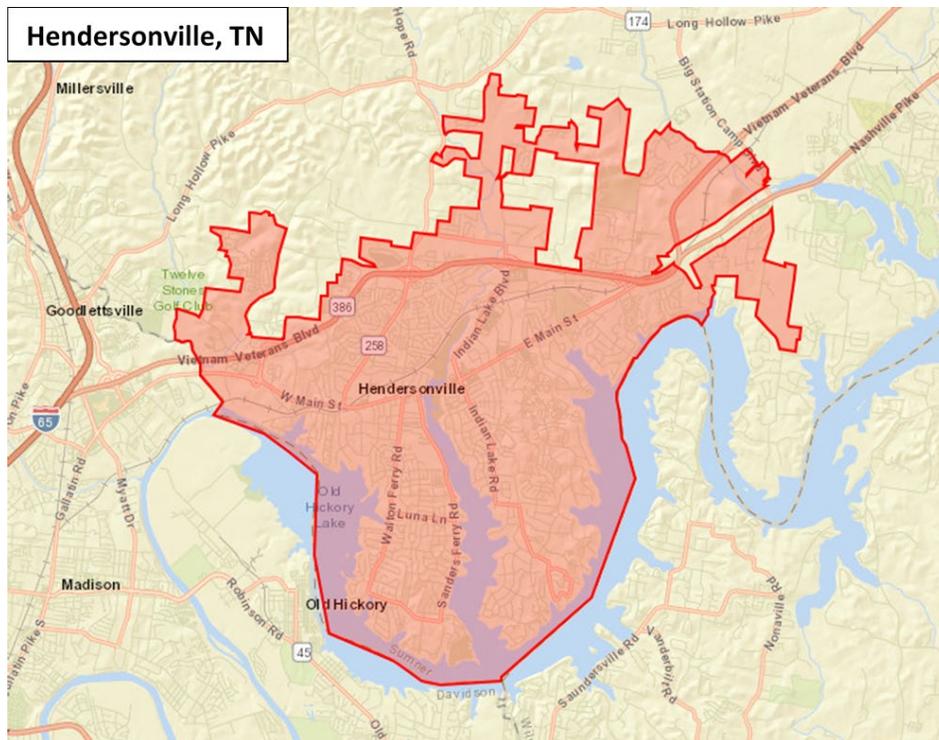
Projected Fee Revenue	\$30,450,726
Existing Development Share	\$0

APPENDIX A: LAND USE ASSUMPTIONS

The City of Hendersonville retained TischlerBise to prepare this study to analyze the impacts of development on the city's capital facilities and to calculate development impact fees based on that analysis. The population and housing unit projections contained in this document provide the foundation for the development impact fee study. To evaluate the demand for growth-related infrastructure from various types of development, TischlerBise prepared documentation on demand indicators by type of housing unit. These metrics are the service units and demand indicators used in the development impact fee study.

Development impact fees are based on the need for growth-related improvements, and they must be proportionate by type of land use. The demographic data and development projections are used to demonstrate proportionality and anticipate the need for future infrastructure. Development impact fee studies typically look out five to ten years, with the expectation that fees will be updated every three to five years. The estimates and projections of residential and nonresidential development in this Land Use Assumptions document are for areas within the boundaries of Hendersonville, Tennessee. The map below illustrates the areas within the Hendersonville Development Impact Fee Service Area.

Figure A1: Development Impact Fee Service Area Map



SUMMARY OF GROWTH INDICATORS

Key development projections for the Hendersonville development impact fee study include housing units and nonresidential floor area. TischlerBise estimates population and housing units using US Census data. The projections contained in this document provide the foundation for the Development Impact Fee Study.

These projections are used to estimate development impact fee revenue and to indicate the anticipated need for growth-related infrastructure. The goal is to have reasonable projections without being overly concerned with precision. Because development impact fee methods are designed to reduce sensitivity to development projections in the determination of the proportionate-share fee amounts, if actual development is slower than projected, fee revenue will decline, but so will the need for growth-related infrastructure. In contrast, if development is faster than anticipated, Hendersonville will receive more fee revenue, but will also need to accelerate infrastructure improvements to keep pace with the actual rate of development.

During the next 10 years, TischlerBise projects an average annual increase of 499 housing units per year.

RESIDENTIAL DEVELOPMENT

Current estimates and future projections of residential development are detailed in this section including population and housing units by type.

Persons Per Housing Unit

According to the U.S. Census Bureau, a household is a housing unit occupied by year-round residents. Development impact fees often use per capita standards and persons per housing unit (PPHU) or persons per household (PPH) to derive proportionate share fee amounts. When PPHU is used in the fee calculations, infrastructure standards are derived using year-round population. When PPH is used in the fee calculations, the development impact fee methodology assumes a higher percentage of housing units will be occupied, thus requiring seasonal or peak population to be used when deriving infrastructure standards. TischlerBise recommends that Hendersonville impose development impact fees for residential development according to the number of persons per housing unit.

Occupancy calculations require data on population and the types of units by structure. The 2020 census did not obtain detailed information using a “long-form” questionnaire. Instead, the U.S. Census Bureau switched to a continuous monthly mailing of surveys, known as the American Community Survey (ACS), which has limitations due to sample-size constraints. For example, data on detached housing units are now combined with attached single units (commonly known as townhouses, which share a common sidewall, but are constructed on an individual parcel of land). For development impact fees in Hendersonville, detached stick-built units, attached units, and mobile home units are included in the “Single-Family” category. The second residential category includes duplexes and all other structures with two or more units on an individual parcel of land. This is referred to as “Multi-Family” category. (Note: housing unit estimates from ACS will not equal decennial census counts of units. These data are used only to derive the custom PPHU factors for each type of unit).

Figure A2 below shows the ACS 2021 5-Year Estimates for Hendersonville. Single-family units averaged 2.63 persons per housing unit (50,101 persons / 19,038 housing units) and multi-family units had an average of 1.78 persons per housing unit (10,350 persons / 5,805 housing units).

Figure A2: Persons per Housing Unit by Type of Housing

Housing Type	Persons	Households	Persons per Household	Housing Units	Persons per Housing Unit	Housing Mix	Vacancy Rate
Single-Family Units ¹	50,101	18,403	2.72	19,038	2.63	76.6%	3.30%
Multi-Family Units ²	10,350	5,162	2.01	5,805	1.78	23.4%	11.10%
Total	60,451	23,565	2.57	24,843	2.43	100.0%	5.10%

Source: U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates

1. Includes detached, attached (i.e. townhouses).
2. Includes dwellings in structures with two or more units, and mobile home units.

Residential Estimates

This analysis projects housing units based on building permit data provided by Hendersonville staff. By applying the building permit data shown below in Figure A3 to 2020 US Census estimates, TischlerBise estimates the 2023 housing stock includes 26,220 housing units – 19,799 single-family units and 6,421 multi-family units. The analysis converts housing units to population using the occupancy factors shown in Figure A2. The 2023 population estimate is 65,059 persons.

Figure A3: Residential Building Permits

Year	Single	Multi	Total
2019	344	97	441
2020	245	137	382
2021	230	328	558
2022	202	115	317
2023*	303	493	796
AVERAGE	265	234	499

*Prorated

Residential Projections

TischlerBise projects future residential development beyond the 2023 base year using the building permit data shown in Figure A3. Over the next 10 years, this results in an increase of 2,647 single-family units and 4,166 multi-family units. To project future population, the analysis converts housing units to population using the occupancy factors shown in Figure A2. For this study, it is assumed that the housing unit size will remain constant. TischlerBise projects a 10-year increase of 4,987 housing units and 11,127 persons (2,647 single-family units X 2.63 persons per housing unit + 4,166 multi-family units X 1.78 persons per housing unit).

Figure A4: Residential Development Projections

Hendersonville	2023	2024	2025	2026	2027	2028	2033	10-Year Increase
	Base Year	1	2	3	4	5	10	
Population								
Single Family	52,961	53,657	54,353	55,049	55,745	56,441	59,922	6,962
Multi-Family	12,098	12,515	12,931	13,348	13,765	14,181	16,264	4,166
Population	65,059	66,172	67,284	68,397	69,510	70,623	76,186	11,127
Housing Units								
Single Family	19,799	20,063	20,328	20,593	20,857	21,122	22,446	2,647
Multi-Family	6,421	6,655	6,889	7,123	7,357	7,592	8,762	2,340
Total	26,220	26,719	27,217	27,716	28,215	28,714	31,207	4,987

APPENDIX B: LAND USE DEFINITIONS

RESIDENTIAL DEVELOPMENT

As discussed below, residential development categories are based on data from the U.S. Census Bureau, American Community Survey. The City of Hendersonville will collect impact fees from all new residential units. One-time impact fees are determined by site capacity (i.e., number of residential units).

Single-Family Units:

1. Single-family detached is a one-unit structure detached from any other house, that is, with open space on all four sides. Such structures are considered detached even if they have an adjoining shed or garage. A one-family house that contains a business is considered detached as long as the building has open space on all four sides.
2. Single-family attached (townhouse) is a one-unit structure that has one or more walls extending from ground to roof separating it from adjoining structures. In row houses (sometimes called townhouses), double houses, or houses attached to nonresidential structures, each house is a separate, attached structure if the dividing or common wall goes from ground to roof.

Multi-Family Units:

1. 2+ units (duplexes and apartments) are units in structures containing two or more housing units, further categorized as units in structures with “2, 3 or 4, 5 to 9, 10 to 19, 20 to 49, and 50 or more apartments.”
2. Boat, RV, Van, Etc. includes any living quarters occupied as a housing unit that does not fit the other categories (e.g., houseboats, railroad cars, campers, and vans). Recreational vehicles, boats, vans, railroad cars, and the like are included only if they are occupied as a current place of residence.
3. Mobile home includes both occupied and vacant mobile homes, to which no permanent rooms have been added. Mobile homes used only for business purposes or for extra sleeping space and mobile homes for sale on a dealer's lot, at the factory, or in storage are not counted in the housing inventory.