



PC Meeting of January 14, 2013

THE CITY OF FAYETTEVILLE, ARKANSAS

125 W. Mountain St.  
Fayetteville, AR 72701  
Telephone: (479) 575-8267

**PLANNING DIVISION CORRESPONDENCE**

TO: Fayetteville Subdivision Committee  
FROM: Jesse Fulcher, Current Planner  
Glenn Newman, Staff Engineer  
THRU: Jeremy Pate, Development Services Director  
DATE: January 7, 2013

**LSD 12-4275: Large Scale Development (W. CENTER ST. AND S.W. CORNER OF DUNCAN AVE./WEST CENTER, 483 & 522):** Submitted by JORGENSEN AND ASSOCIATES for properties located on WEST CENTER STREET AND THE SOUTHWEST CORNER OF DUNCAN AVENUE. The properties are zoned RMF-40, RESIDENTIAL MULTI-FAMILY, 40 UNITS PER ACRE AND DG, DOWNTOWN GENERAL and contain approximately 2.75 acres. The request is for 175 multi-family units with a parking deck.

Planner: Jesse Fulcher

**Findings:**

*Property and Background:* The subject property is zoned DG, Downtown General and RMF-40, Residential Multi-family, and is bounded by Center Street, Harmon Avenue and Duncan Avenue. This site is currently developed with an apartment complex, triplex and five single-family homes. Surrounding land use and zoning is depicted in *Table 1*.

**Table 1  
Surrounding Land Use and Zoning**

Direction from Site	Land Use	Zoning
North	Residential	RMF-40, Residential Multi-family, 40 du/acre
South	Residential	RMF-40, Residential Multi-family, 40 du/acre
East	Residential	DG, Downtown General RMF-40, Residential Multi-family, 40 du/acre
West	University of Arkansas	RMF-24, Residential Multi-family, 24 du/acre

*Proposal:* The request is for Large Scale Development approval to construct a five-story, multi-family development with 175 dwelling units, 480 bedrooms, and a seven-story parking structure.

*Adjacent Master Street Plan Streets:* Center Street (Local), Harmon Avenue (Local), Duncan Street (Local).

*Right-of-way being dedicated:* Additional right-of-way dedication beyond the standard 25 feet from centerline may be required for a turn lane on Center Street, depending on existing conditions. Adequate right-of-way exists for Harmon and Duncan Avenue.

***Street Improvements:*** Street improvements are recommended for all adjacent streets.

Center Street – Staff recommends that Center Street be improved to provide three travel lanes, including an east bound, west bound and center turn lane. A ten foot sidewalk shall be installed on the south side of the street with tree wells and street lights, as well as new curb and gutter and storm drains.

Harmon Avenue – Staff recommends that Harmon Avenue be improved to provide an 8 foot sidewalk on the east side of the street with tree wells and street lights, as well as new curb and gutter and storm drains.

Duncan Avenue – Staff recommends that Duncan Avenue be improved to provide a 10 foot sidewalk on the west side of the street with tree wells and street lights, as well as new curb and gutter and storm drains.

Intersection (Center and Duncan) – Staff recommends that the existing single head traffic light at Center and Duncan be replaced with a standard four-way traffic signal system, including pedestrian crossing signs and crosswalks at the north and west legs of the intersection.

Intersection (Center and Harmon) – Staff recommends that this intersection remain as a two-way stop intersection. Even though the added traffic from the proposed development will likely reduce the level of service for north and south-bound lanes below an acceptable LOS “D” during the AM, school PM and typical PM peak hours, the impact of the development on this intersection is relatively small. Furthermore, the north/south legs of this intersection handle the least amount of traffic between the two intersections. Staff is more concerned with maintaining service levels for Center Street, the primary east/west route that would be negatively impacted if the intersection was converted to a four-way stop condition. Additionally, the signalized intersection of Duncan and Center is just 300 feet to the east, creating an additional stop condition for east/west traffic already.

The applicant shall install crosswalks at the north, south and east legs of the intersection, and install lighted pedestrian warning signs, such as Rapid Flash Beacons or LED lighting embedded into the crosswalks. The crosswalk on Center Street shall be fitted with LED lighting to increase visibility. The final location and design shall be approved by city staff prior to construction plan approval. City staff will continue to closely monitor this intersection after development and will install additional traffic control devices if necessary.

*Tree Preservation:* See report from Urban Forester.

*Parks:* Fees in the amount of \$74,360 for the proposed 175 units are due prior to the issuance of building permits. Credit is given for the existing 34 multi-family units and 5 single-family units.

*Parking and Loading:* The applicant proposes to construct a seven-level parking garage internal to the site to include 391 parking spaces, 33 motorcycle/scooter spaces, and 100 bike racks. Because the applicant is proposing to utilize a parking garage instead of a parking lot, landscaping requirements, such as tree islands and shrubs, are not required.

*Urban Residential Design Standards:* Staff has completed the review of the proposed elevations for compliance with the Urban Residential Design Standards and finds that the proposal complies with the minimum requirements.

*Height Variance:* The underlying DG, Downtown General and RMF-40 zoning districts restrict building height to 4 stories or 56 feet, which ever is less, or 60 feet, respectively. Building height is measured vertically from the existing natural grade to any part of the structure, excluding appurtenances, such as an elevator shaft, parapet, antennas, chimneys, etc that are usually required to be placed above the roof and not intended for human occupancy.

Until recently, the Planning Commission reviewed height variances. However, the zoning code was amended so that height variances are presented to the Board of Adjustment, who should be reviewing variances of the zoning chapter. A variance from the height limit of the Downtown General and RMF-40 zoning districts was approved by the Board of Adjustment on January 7, 2013.

**Recommendation:** Staff recommends approval of **LSD 12-4275** with the following conditions:

**Conditions of Approval:**

1. Planning Commission determination of street improvements:
  - a. Center Street: Staff recommends that Center Street be improved to provide three travel lanes, including an east bound, west bound and center turn lane. A ten foot sidewalk shall be installed on the south side of the street with tree wells and street lights, as well as new curb and gutter and storm drains.
  - b. Harmon Avenue: Staff recommends that Harmon Avenue be improved to provide an eight foot sidewalk on the east side of the street with tree wells and street lights, as well as new curb and gutter and storm drains. The final striping plan shall be approved by staff prior to construction plan approval.
  - c. Duncan Avenue: Staff recommends that Duncan Avenue be improved to provide a ten foot sidewalk on the west side of the street with tree wells and street lights, as well as new curb and gutter and storm drains.
  - d. Intersection (Center and Duncan) – Staff recommends that the existing single head traffic light at Center and Duncan be replaced with a standard four-way traffic signal system with video monitoring system. Improvements shall also include pedestrian crossing signs and crosswalks at the north and west legs of the intersection. Pedestrian crossing warning sign(s) shall be installed east of the intersection to increase motorist awareness of the upcoming crosswalks.
  - e. Intersection (Center and Harmon) – Staff recommends that this intersection remain as a two-way stop intersection. Even though the added traffic from the proposed development will likely reduce the level of service for north and south-bound lanes below an acceptable LOS “D” during the AM, school PM and typical PM peak hours,

the impact of the development on this intersection is relatively small. Furthermore, the north/south legs of this intersection handle the least amount of traffic between the two intersections. Staff is more concerned with maintaining service levels for Center Street, the primary east/west route that could be negatively impacted if the intersection was converted to a four-way stop condition. Additionally, the signalized intersection of Duncan and Center is just 300 feet to the east, creating an additional stop condition for east/west traffic.

The applicant shall install crosswalks at the north, south and east legs of the intersection, and install lighted pedestrian warning signs, such as Rapid Flash Beacons or LED lighting embedded into the crosswalks. The crosswalk on Center Street shall be fitted with LED lighting to increase visibility. The final location and design shall be approved by city staff prior to construction plan approval. City staff will continue to closely monitor this intersection after development and will install additional traffic control devices if necessary.

- f. Street Repairs: The condition of the surrounding streets shall be cataloged before and after construction. Any damage to existing public infrastructure shall be repaired prior to occupancy permits.

1/3/12: THE SUBDIVISION COMMITTEE RECOMMENDED IN FAVOR OF THE STREET IMPROVEMENTS.

2. Planning Commission determination of compliance with Urban Design Standards. *Staff finds that the proposed structure meets for Urban Design Standards.*

1/3/12: THE SUBDIVISION COMMITTEE RECOMMENDED IN FAVOR OF THE DESIGN.

3. Planning Commission determination of a waiver from Chapter 166.13 Underground Utility Wires. The applicant is requesting approval to relocate existing overhead power lines and service lines from the west side of Duncan to the east side, as opposed to relocating these lines underground. *Staff finds in favor of the request due to circumstances unique to this particular application. The existing overhead main line only serves the homes on the east side of Duncan, which have overhead service. Relocating the existing main line underground will still require power poles to be placed along Duncan Avenue to maintain overhead service to each home. This would meet the letter, but not the intent of the code. The applicant could potentially obtain permission from six different home owners to convert the electric service to their homes from overhead to underground, but this not required under the code and would be an undue hardship to the applicant. Further, each home owner would have to grant a utility easement across their front yard, and endure the installation of the new underground facilities.*

1/3/12: THE SUBDIVISION COMMITTEE RECOMMENDED IN FAVOR OF THE REQUESTED VARIANCE.

4. The applicant shall pay parks fees in the amount of \$74,360 for the proposed 175 units prior to the issuance of building permits. Credit may be applied for the existing on-site

residential dwelling units.

5. The final location of all access ramps shall be approved by the Engineering Department prior to construction plan approval.
6. The final location of all new light poles, traffic signals, traffic control boxes, and pedestrian signage shall be coordinated with Transportation, Planning and Engineering staff during construction plan development and shall be approved prior to construction plan approval. In no case shall these items reduce the approved sidewalk widths.
7. The following revisions are required prior to building permit approval:
  - a. Show location of improvements, including ADA access ramps on construction plans.
  - b. The existing right-of-way for Center Street shall be clearly marked to ensure that at least 25' of right-of-way is being provided from centerline, as required by the Master Street Plan, or as necessary to allow all approved street improvements to occur.
  - c. Relocate the transformer outside of the undeveloped right-of-way.
  - d. Update building elevations to reflect Board of Adjustment conditions of approval.

**Standard conditions of approval:**

8. Impact fees for fire, police, water, and sewer shall be paid in accordance with City ordinance.
9. Plat Review and Subdivision comments (to include written staff comments provided to the applicant or his representative, and all comments from utility representatives: AR Western Gas, SWBT, Ozarks, SWEPCO, Cox Communications).
10. Staff approval of final detailed plans, specifications and calculations (where applicable) for grading, drainage, water, sewer, fire protection, streets (public and private), sidewalks, parking lot(s) and tree preservation. The information submitted for the plat review process was reviewed for general concept only. All public improvements are subject to additional review and approval. All improvements shall comply with City's current requirements.
11. All exterior lights shall comply with the City lighting ordinance. Manufacturer's cut-sheets are required for review and approval prior to issuance of a building permit.
12. All mechanical/utility equipment (roof and ground mounted) shall be screened using materials that are compatible with and incorporated into the structure. **A note shall be clearly placed on the plat and all construction documents indicating this requirement.**
13. Trash enclosures shall be screened on three sides with materials complimentary to and compatible with the principle structure. Elevations of the proposed dumpster enclosure shall be submitted to the Planning and Solid Waste Divisions for review prior to building permit.

14. All freestanding and wall signs shall comply with ordinance specifications for location, size, type, number, etc. Any proposed signs shall be permitted by a separate sign permit application prior to installation.
  15. All existing utilities below 12kv shall be relocated underground. All proposed utilities shall be located underground.
  16. Large scale development shall be valid for one calendar year.
  17. Prior to building permit, a cost estimate for all required landscaping is to be submitted to the Landscape Administrator for review. Once approval is gained, a guarantee is to be issued (bond/letter of credit/cash) for 150% of the cost of the materials and installation of the plants. This guarantee will be held until the improvements are installed and inspected, at the time of Certificate of Occupancy.
  18. Prior to the issuance of a building permit the following is required:
    - a. Grading and drainage permits
    - b. An on-site inspection by the Landscape Administrator of all tree protection measures prior to any land disturbance.
    - c. Separate easement plat for this project that shall include the tree preservation area and all utility easements.
    - d. Project Disk with all final revisions
    - e. One copy of final construction drawings showing landscape plans including tree preservation measures submitted to the Landscape Administrator.
    - f. Completion of all required improvements or the placement of a surety with the City (letter of credit, bond, escrow) as required by Section 158.01 "Guarantees in Lieu of Installed Improvements" to guarantee all incomplete improvements. Further, all improvements necessary to serve the site and protect public safety must be completed, not just guaranteed, prior to the issuance of a Certificate of Occupancy.
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**Planning Commission Action:**     Tabled             Denied             Forwarded

**Meeting Date:** January 14, 2013

**Motion:**

**Second:**

**Vote:**

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## Fayetteville Unified Development Code

### 166.13 Underground Utility Wires

- (A) In the new residential developments requiring Planning Commission approval and new commercial developments all utility wires, lines, and/or cable in said developments utilized by electric and/or telecommunications companies shall be placed underground.
- (B) *Waiver.* In case of hardships, (including but not limited to financial, geological, environmental, or regulatory) unique to the subject property, the Planning Commission may grant a waiver, on a permanent or temporary basis, to allow the erection, construction, installation, maintenance, use or operation of poles and overhead wires and associated overhead structures.
- (C) *Exemptions.* The following shall be exempt from the requirements of this section:
  - (1) Overhead wires, supporting structures, and associated structures of a temporary nature which provide temporary service. A permit obtained from the Zoning and Development Administrator for said temporary service, addressing the nature and duration of said service, shall be required.
  - (2) Existing lines of 12Kv and above.
  - (3) A single power pole near the exterior boundary of a development shall be allowed to provide connections for underground service.
- (D) Nothing herein shall be construed to usurp the authority of the Arkansas Public Services Commission and in all instances of conflict, the rules and regulations of said Arkansas Public Service Commission shall prevail.

(Ord. No. 4100, §2 (Ex. A), 6-16-98; Ord. No. 4169, §1, 6-16-99)



LANDSCAPE REGULATIONS – Chapter 177

To: Jorgensen and Associates, Blake Jorgensen  
 CC: Jesse Fulcher, Current Planner  
 From: Megan Dale, Urban Forester/Landscape Administrator  
 Date: 14 January 2013  
 Subject: LSD 12-4275: West Center Planning Commission Review Comments

Applicable Requirements:

Y	Site Development & Parking Lot Standards
Y	Street Tree Planting Standards
N/A	Stormwater Facilities

Plan Checklist:

Y= submitted by applicant  
 N=required by City Code but not included on submitted plan  
 NA= not applicable

Tech Plat	SC	PC	
			<b>All Landscape Plans</b>
Y	Y	Y	<b>Irrigation</b> notes either automatic or hose bib 100' o.c. (177.03A.7.g & 177.04.B.3.a)
Y	Y	Y	<b>Species of plant material identified</b> (177.03.A.7.d & e)
Y	Y	Y	<b>Size of plant material at time of installation indicated</b> minimum size 2" caliper for trees and 3 gal. shrubs (177.03.A.7.b & c)
Y	Y	Y	<b>Soil amendments</b> notes include that soil is amended and sod removed (177.03.C.6.b)
Y	Y	Y	<b>Mulch</b> notes indicate organic mulching around trees and within landscape beds (177.03.C.6.c & d)
N	N	N	<b>LSD and Subdivisions plans stamped by a licensed Landscape Architect, others by Landscape Designer</b> (177.03.B)
Y	Y	Y	<b>Planting bed contained by edging</b> (177.03.C.6.f)
Y	Y	Y	<b>Planting details according to Fayetteville's Landscape Manual</b> (177.03.C.6.g)



Tech Plat	SC	PC	
			<b>Site Development &amp; Parking Lot Standards</b>
NA	NA	NA	<b>Wheel stops/ curbs</b> (177.04.B.1)
NA	NA	NA	<b>Interior landscaping</b> (177.04.C) <i>Narrow tree lawn (8' min width, 37.5' min length/ 1 tree per 12 spaces) OR Tree island (8' min. width, 18.7' min. length/1 tree per 12 spaces) All parking lot trees must be deciduous (177.04.C.3)</i>
NA	NA	NA	<b>Placement of Trees</b> (177.04.C.2) <i>Either side at points of access (entrance/exit)</i>
NA	NA	NA	<b>Perimeter landscaping</b> (177.04.D) <i>Side and rear property lines (5' wide landscaped) Front property line (15' wide landscape) (177.04.D.2.a) Shade trees planted on south and west sides of parking lots (177.04.D.2.e) Parking lot adjacent to R.O.W. - continuous row planting of shrubs - 50% evergreen. Remaining landscaping to be ground cover and / or turf.) (177.04.D.4a) NOTE: Shade trees are described in street tree planting standards</i>
			<b>Street Tree Planting Standards (time of F.P. or permit) (177.05)</b>
NA	NA	NA	<b>Residential Subdivisions- 1 large species shade tree/ lot</b> tree planted within R.O.W. if possible
Y	Y	Y	<b>Nonresidential Subdivision- 1 large species shade tree/30 L.F.</b> tree planted within 15-25' greenspace
N	Y	Y	<b>Urban Tree Wells-urban streetscape only- 8' sidewalk</b> , trees every 30 L.F. (177.05.B.3.a-f)
NA	NA	NA	<b>Structural Soil-if urban wells are used, a note or detail of structural soil must be indicated on the landscape plan</b>
NA	NA	NA	<b>Timing of planting indicated on plans (subdivisions only) (177.05.A.4)</b>
NA	NA	NA	<b>Written description of the method for tracking plantings (177.05.A.4.e)</b>
N	Y	NA	<b>Plan contains 3-year Maintenance and Monitoring Agreement. The owner shall deposit with the City of Fayetteville a surety for approved landscape estimate. (177.05.A.2.e)</b>
Tech Plat	SC	PC	
			<b>Stormwater Facilities (time of F.P. or permit) (177.06.A – C)</b>
NA	NA	NA	<b>1 deciduous or evergreen tree/ 3000 square feet</b>
NA	NA	NA	<b>4 large shrubs or small trees (3 gal) / 3000 square feet</b>
NA	NA	NA	<b>6 shrubs or grasses (1 gal) / 3000 square feet</b>
NA	NA	NA	<b>Ground cover unless seed or sod is specified</b>
NA	NA	NA	<b>50% of facility planted with grass or grass like plants</b>

**Conditions of Approval:**

1. Address items above marked with "N" and redlines.
2. Update Landscape Requirements Table. Show 7 on-site mitigation and 22 tree escrow.
3. Include tree well detail.
4. Prior to Building Permit approval, all required landscaping will require a performance bond and a completed Landscape Surety Form. Submit a landscape estimate for review at time of construction plan review.

5. Prior to Certificate of Occupancy, a 3-year Maintenance Plan must be submitted with a 3-year surety (letter of credit, bond or cash) and completed Landscape Surety Form.
6. Landscape Architect of record shall inspect site and direct Contractor to make changes to meet Approved plans and details prior to Urban Forester Certificate of Occupancy inspection. No changes to the approved landscape plan may be made without Urban Forester approval.



URBAN FORESTRY DIVISION

TREE PRESERVATION AND PROTECTION – Chapter 167

To: Jorgensen and Associates, Blake Jorgensen  
 CC: Jesse Fulcher, Current Planner  
 From: Megan Dale, Urban Forester/Landscape Administrator  
 Date: 14 January 2013  
 Subject: LSD 12-4275: West Center Planning Commission Review Comments

Requirements Submitted:

Y	Initial Review with the Urban Forester
N/A	Site Analysis Map Submitted
N/A	Site Analysis Written Report Submitted
N/A	Complete Tree Preservation Plan Submitted
N/A	Tree Mitigation Form Submitted
N/A	Tree Preservation Wavier Submitted

Canopy Measurements: Site includes two different zoning requirements

<b>Total Site Area (minus Master Street Plan ROW, existing easements, and Dedicated Parkland)</b>	
acres	1.68
square feet	73,169
<b>Existing Tree Canopy (minus existing easements)</b>	
acres	0.45
square feet	19,810
percent of site area	27.1%
<b>Tree Canopy Preserved</b>	
acres	0.02
square feet	980
percent of total site area	1.3%
<b>Tree Canopy Removed (including off-site canopy)</b>	
square feet	18,830
percent of total site area	25.7%
<b>Site Percent Min. Canopy Required – Zoning DG</b>	<b>10%</b>

<b>Total Site Area (minus Master Street Plan ROW, existing easements, and Dedicated Parkland)</b>	
acres	0.44
square feet	19,007
<b>Existing Tree Canopy (minus existing easements)</b>	
acres	0.22
square feet	9,679
percent of site area	50.9%
<b>Tree Canopy Preserved</b>	
acres	0.10
square feet	4,280
percent of total site area	22.5%
<b>Tree Canopy Removed (including off-site canopy)</b>	
square feet	5,399
percent of total site area	28.4%
<b>Site Percent Min. Canopy Required – Zoning DG and RMF-40</b>	
	20%

**Mitigation: Required -**

Canopy Below Required	Preservation Priority/Type	Forestation Base Density (ft2)	Number of 2" caliper trees to be planted
6,337 ft2	High Priority	218	29
ft2	Mid Priority	290	
ft2	Low Priority	436	
6,047 ft2	<b>Total Mitigation</b>		<b>29</b>

**On-site Mitigation = 7 trees**

**Tree Escrow equivalent of 22 trees at \$675 each = \$14,850**

Mitigation Type Requested:

On-Site     Off-Site     Tree Escrow     Not Requested Yet

Mitigation Type Requested Approved:  YES     NO

**TREE PROTECTION PLAN CHECKLISTS AND COMMENTS:**

*Plan Checklist:*

*NA = not applicable*

*Yes = submitted by applicant*

*No = required by City Code but not included on submitted plan*

**The Site Analysis Plan [167.04(H)(1)]**

Tech Plat	SD	PC	Site Analysis Plan Components
Y	Y	Y	5 year aerial check on existing trees
Y	Y	Y	Property Boundary
Y	Y	Y	Natural Features 100ft beyond property line shown
Y	Y	Y	Existing Topography with slopes ≤ 15% highlighted
Y	Y	Y	Soils

Y	Y	Y	Significant Tree(s): 24", 18" and 8" DBH
Y	Y	Y	Table listing Sig. Trees with species, size, health, priority
Y	Y	Y	Grouping of Trees: all other trees that do not meet significant requirements
Y	Y	Y	Table listing Grouped Trees with average species, size, health, priority
Y	Y	Y	All existing utilities
N/A	Y	Y	All perennial and intermittent streams with approximate center line
N/A	Y	Y	Floodplains/Floodways
Y	Y	Y	Existing street, sidewalk or bike path ROW
Y	Y	Y	Submitted Site Analysis Plan

**The Analysis Plan Report [167.04(H)(4)]**

Tech Plat	SD	PC	Analysis Plan Report Components
Y	Y	Y	Detail Design Approaches used to minimize damage to OR removal of existing canopy
Y	Y	Y	Justification for removal of individual or groupings of trees/canopy
Y	Y	Y	Details providing information on on-site mitigation OR off-site alternatives
Y	Y	Y	Submitted Analysis Report

**Tree Preservation Plan [167.04(H)(2)]**

Tech Plat	SD	PC	Tree Preservation Plan Components
N	Y	Y	Shows ALL Proposed Site Improvements
Y	Y	Y	Delineates trees/canopy to be preserved and removed
Y	Y	Y	Delineates existing and proposed grading
N	Y	Y	Depict limits of soil disturbance
			Detail methods that will be used to protect trees during construction:
N	Y	Y	1. Tree Protection Fencing
N	Y	Y	2. Limits of Root Pruning
N	N	N	3. Traffic flow on work site
N	N	N	4. Location of material storage
N	N	N	5. Location of concrete wash out
N	N	N	6. Location of construction entrance/exit
N	Y	Y	Location of ALL existing and new utility/drainage easements

**Conditions of Approval:**

1. Address all items above marked with "N" and redlines.
2. Add note that all tree preservation fencing edges will be root pruned with an air spade prior to excavation for building foundation or sidewalk.
3. On Tree Preservation Demo plan include notes about how drives, walls will be removed with minimal root damage.
4. Explore options for on-site mitigation opposed to all tree escrow.
5. Prior to Building Permit approval, all required landscaping will require a performance bond and a completed Landscape Surety Form. Submit a landscape estimate for review at time of construction plan review.

6. Prior to Certificate of Occupancy, a 3-year Maintenance Plan must be submitted with a 3-year surety (letter of credit, bond or cash) and completed Landscape Surety Form.

December 05, 2012

To: City of Fayetteville Planning Staff

From: Chris Baribeau, AIA      Modus Studio  
Seth Mims                      Specialized Real Estate Group  
Blake Jorgensen              Jorgensen & Associates

Re: West Center Large Scale Development Submission | Project Narrative

The nature of urban infill development and planning in this city seeks a positive, relevant, and appropriate armature for the continued progress of Fayetteville. As this place continues its journey as one of the top ten places in the country to live and hosts the state's flagship University, this multifamily projects seek to add proper density and enhance the quality of walkable urban life in and around the Downtown Fayetteville area.

The Project Center proposal is a multifamily project located on the block bound by Harmon Avenue, Center Street, and Duncan Avenue on an approximately 2 acre site adjacent to the University of Arkansas. This location is the northern edge of a populated and thriving multifamily neighborhood. All surrounding property, and a small portion of this proposal, is zoned RMF-40. The remainder of this project site is zoned Downtown General with a strong, walkable connection (walkscore of 77 'Very Walkable') to not just the University, but also the Dickson Street Entertainment District, and the Historic Fayetteville Square. This zoning also allows for the proper range of uses that will allow for basic neighborhood amenities such as coffee shops to exist. Project Center seeks to provide a new sustainable community consisting of 175+/- units and 447+/- beds within the established multifamily context. Interior to the site, the project will have a mostly embedded, multi-story parking garage able to support 408+/- automobiles, motorcycles, scooters, and 100+ covered bicycle spaces. The project will privilege walk-ability and bike-ability over drive-ability.

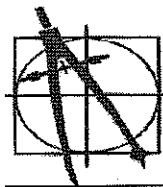
Project Center has the opportunity to be a unique catalyst in the Fayetteville core. Within a sustainable culture resides a new and distinctive demographic; a generation seeking something better than status quo and an aesthetic beyond traditional norms. This project seeks to embrace the fresh tendencies for modern sustainability that permeate the exceedingly knowledgeable, diversified and cultured people that will ultimately inhabit the project.

The development and design team hold certain standards for the character of the project. Quality local materials and the real accountability of place are guidelines for the project perspective. The design intent maintains the following basic principles:

- modern, simple spaces
- quality of real materials that support sustainability through longevity
- design rooted in the uniqueness of place, enabling sustainability through community ownership
- building/site and interior/exterior relationships that reinforce the walkable urban fabric and character
- successful value-driven design decisions in lieu of bottom dollar defaults
- contemporary/flexible programming that supports present relevance and anticipates future uses
- transit oriented development aligned with the City of Fayetteville 2030 plan

Sincerely,

  
Chris M. Baribeau, AIA  
modus studio



# JORGENSEN & ASSOCIATES

## CIVIL ENGINEERS • SURVEYORS

124 WEST SUNBRIDGE, SUITE 5 • FAYETTEVILLE, ARKANSAS 72703 • (479) 442-9127 • FAX (479) 582-4807

DAVID L. JORGENSEN, P.E., P.L.S.  
JUSTIN L. JORGENSEN, P.E.  
BLAKE E. JORGENSEN, P.E.  
JARED S. INMAN, P.E.

10/12/12

City of Fayetteville  
113 W. Mountain  
Fayetteville, AR 72701

Attn: Jesse Fulcher, Associate Planner  
Re: LSD-00-4275 West Center

Dear Jesse;

Please find the updated preliminary Construction Plans for the West Center LSD. The plans have been modified as per comments received at the Technical Plat review. Included in this submittal are a Traffic Study, updated plans, and supplemental architectural documents from Modus Studio.

As part of this correspondence, we'd like to try and clarify some of the concerns/questions that were discovered during the initial review:

Harmon Avenue is currently a mixed width road, where portions have curb and others don't. The Right-of-Way does expand from a total of 50' to a total of 66.67' on the north end. We plan to improve the east side of this road with a full curb section along with an 8' sidewalk along the back-of-curb. The improved road will result in a uniform width of 24' of roadway. No turn lane is planned on the north end of Harmon for several reasons; by decreasing the width of this portion of the road, site distance triangles will be improved and the smaller intersection will provide more traffic calming for pedestrian crossing at this intersection. Additionally, an exit only from the parking deck has been provided to the east to Duncan, this will aid in reducing out-bound traffic to Harmon. From discussions with Fayetteville High School, it is their desire to limit student traffic on Harmon towards the school, Harmon would ultimately provide game-day traffic, namely for visiting schools (visitor facilities are on the north end of the campus). Having no turn lane on the north end will also aid in preserving the existing trees that are located along the east side of Harmon.

Center Street will be widened on the south side to allow for 3 three lanes (one turn lane). The actual centerline and right-of-way do not run parallel to the existing road; the existing right-of-way is 40.6'. When the Oak Ridge Trail was constructed at the existing back-of-curb, the correct right-of-way was not acquired on the north side; therefore additional right-of-way is being required to be dedicated on our portion of the site to run parallel with Oak Ridge Trail. This will result in a right-of-way of 53.92 on the west end and 45.88' on the east end (on the east end, we anticipate right-of-way being dedicated on the north side to bring the trail to within the right-of-way and ultimately the right-of-way will run parallel to the right-of-way on the south side. A 10' sidewalk is being planned along the new back-of-curb on the south side, with a portion being 8' on the west side.

Duncan Street has sufficient right-of-way (50'), however the road does not meet fire code for our proposed multi-story structure. We will be widening the west side of this road to 27' to meet fire code, additionally a 10' sidewalk will be constructed for most of the road. The exception is on the south end where our proposed building is further than 30' from the back of the curb. The building has been placed as such to preserve

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the existing trees, to bring this portion of the structure into compliance, we propose constructing a mountable sidewalk that is 12.18 wide, allowing fire trucks to pull up on this portion of the sidewalk and be within 30' of the structure. From this point south, the side walk will follow the curb and tie into the existing sidewalk.

Additional materials as provided by Modus Studio will address the parking deck layout, height axon diagrams, shadow studies, and elevations.

We hope that this re-submittal will aid you all in your reviews and we look forward to being able to answer and questions or concerns that you all may have.

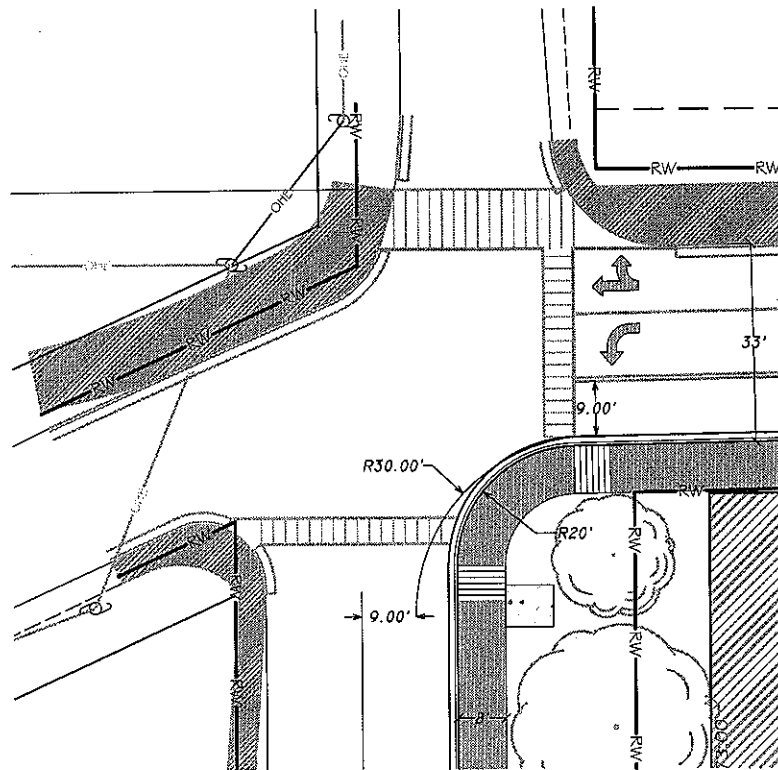
Sincerely;

  
\_\_\_\_\_  
Blake E. Jorgensen, P.E.

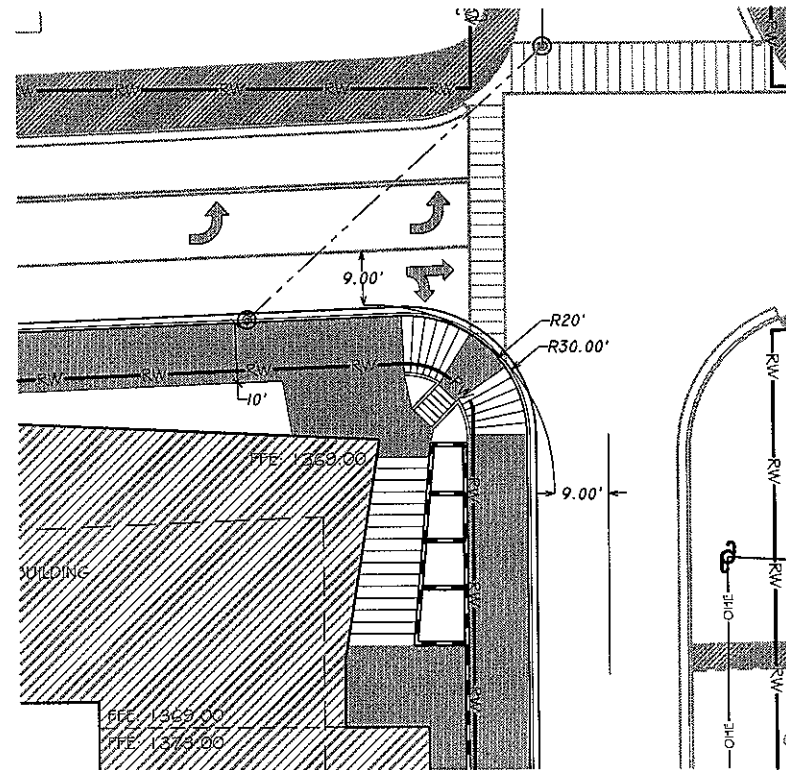


JORGENSEN & ASSOCIATES  
CIVIL ENGINEERS • SURVEYORS

HARMON # CENTER



DUNCAN # CENTER

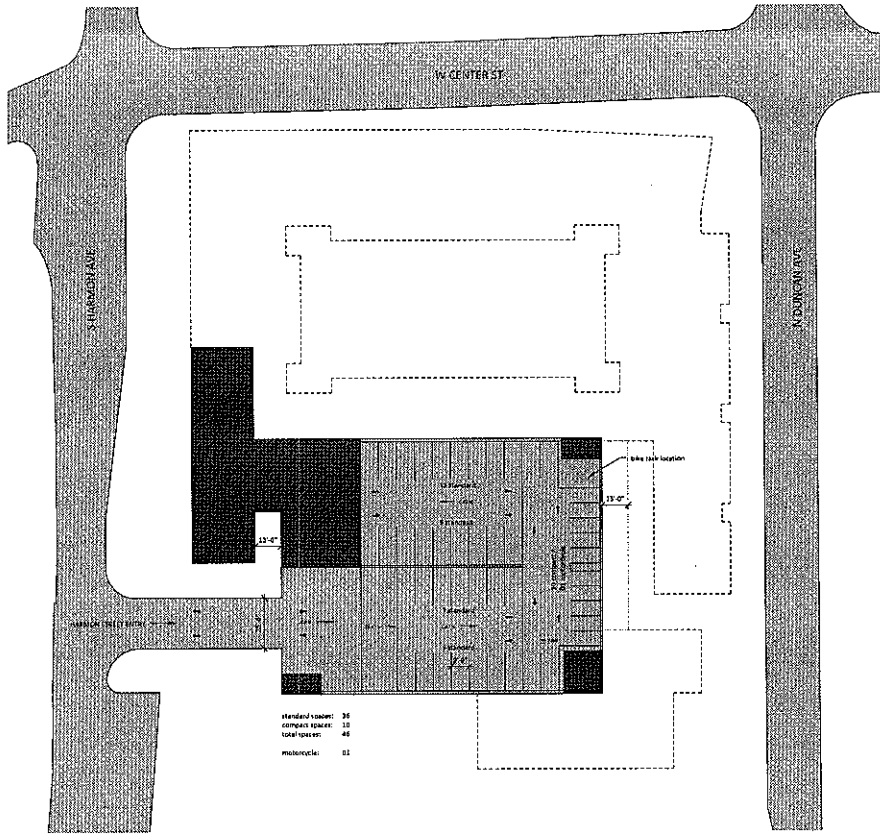


SCALE: PLAN	DATE REVISION	DESIGNED BY	DRAWN BY	BEY
DATE: 12/21/12			DLJ	ELSON/BOGGS/PLS
EFFECTIVE RADIUS @ INTERSECTIONS FOR				
WEST CENTER				
JORGENSEN & ASSOCIATES CIVIL ENGINEERS • SURVEYORS				

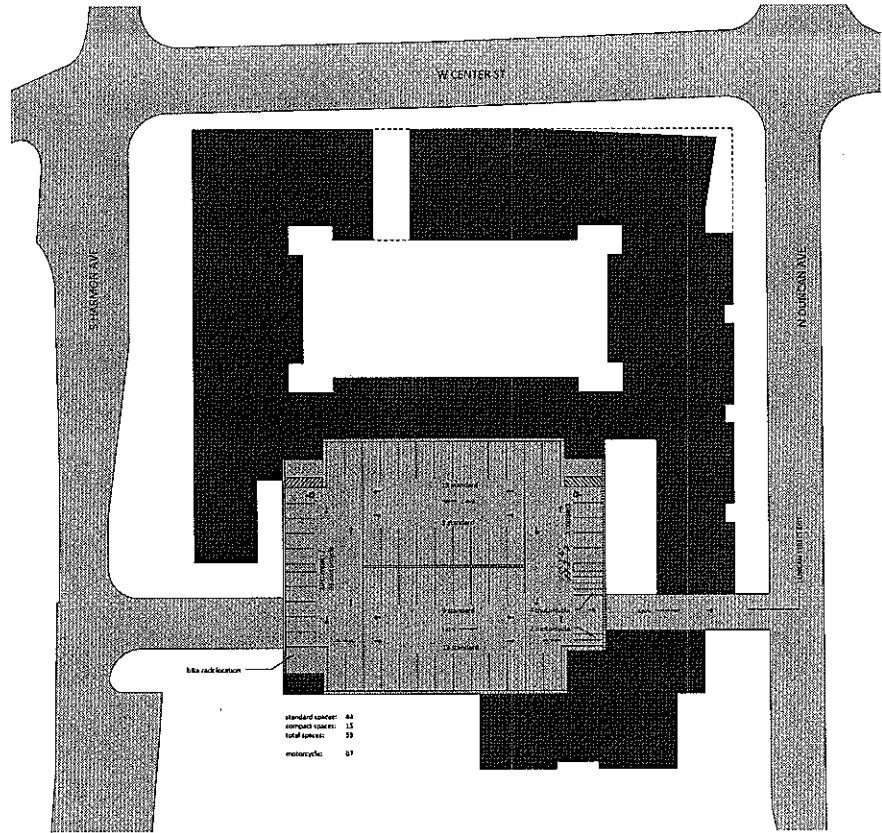


west center | fayetteville, arkansas

parking garage layout



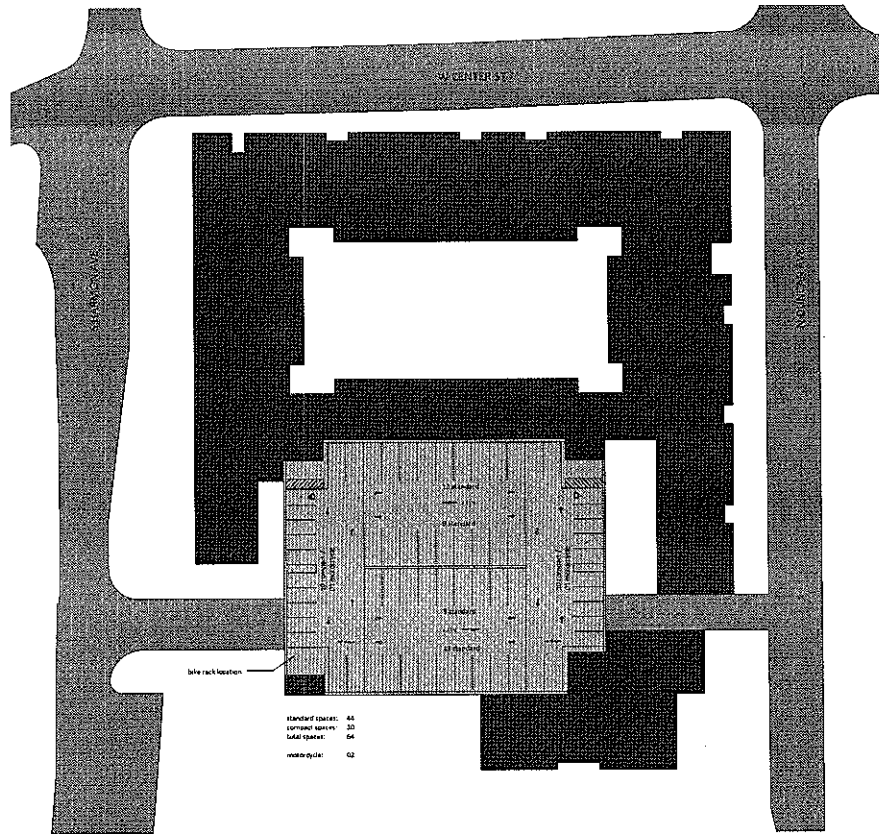
1 | GARAGE - LEVEL 00  
1/2" = 1' - 0"



2 | GARAGE - LEVEL 01  
1/2" = 1' - 0"

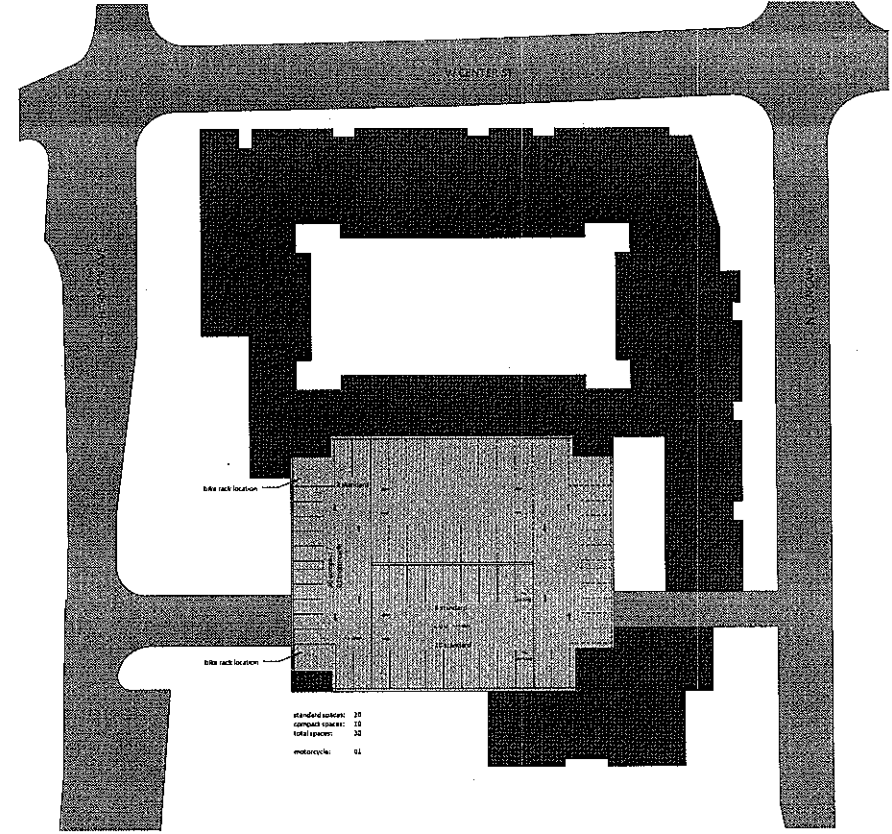
west center | fayetteville, arkansas

parking garage layout



2 | GARAGE - LEVEL 02, 03, 04, 05  
11/24/13 1" = 30'-0"

standard spaces: 44  
compact spaces: 20  
total spaces: 64  
motorcycle: 02



1 | GARAGE - LEVEL 06  
11/24/13 1" = 30'-0"

standard spaces: 25  
compact spaces: 10  
total spaces: 35  
motorcycle: 01

PARKING:  
standard spaces: 276  
compact spaces: 133  
total spaces: 409  
motorcycle spaces: 013  
TOTAL: 409

# TRAFFIC STUDY

# Traffic Study

## West Center

*prepared for:*

### Jorgensen & Associates

Center Street and  
Harmon Avenue and  
Duncan Avenue

Fayetteville, Arkansas



**PETERS & ASSOCIATES**  
ENGINEERS, INC.

• CIVIL & TRAFFIC ENGINEERING •

5507 Ranch Drive - Suite 205 (501) 868-3999  
Little Rock, Arkansas 72223 Fax (501) 868-9710

Project No.: P-1604

January 9, 2013

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## EXECUTIVE SUMMARY

Peters & Associates Engineers, Inc., has conducted a traffic engineering study relating to West Center, a proposed approximate 480 bed residential student apartment development in Fayetteville, Arkansas. West Center is proposed to be located on the south side of Center Street, on the east side of Harmon Avenue and on the west side of Duncan Avenue. The site will replace an existing approximate 31-unit apartment development plus a triplex and five single-family residential houses. Access to the West Center development is proposed via a fully-directional access drive (Drive A) to intersect Harmon Avenue approximately 270 feet south of Center Street and an outbound only access drive (Drive B) to intersect Duncan Avenue approximately 270 feet south of Center Street. The primary focus of this report is to assess traffic operational characteristics of the adjacent intersections of Center Street and Duncan Avenue, Center Street and Harmon Avenue and of access drives proposed to serve the site so they provide acceptable operation. The site is just south of the Oak Ridge Multi-Use Trail located along the north side of Center Street.

Hourly, 24-hour traffic counts were made at the following locations in the vicinity of the site by this consultant as a part of this study:

- Center Street approaches to Duncan Avenue
- Duncan Avenue approaches to Center Street
- Center Street approaches to Harmon Avenue
- Harmon Avenue approaches to Center Street.

Existing vehicle and pedestrian turning movement count data were gathered by this consultant for the following intersections during the AM, school PM and typical PM peak hours:

- Center Street and Duncan Avenue
- Center Street and Harmon Avenue.

Since West Center is proposed to house primarily University of Arkansas students, the number of residents is typically used as the trip-generation independent variable (approximately 480 beds or residents) for this type of land-use. Additionally, since this development will consist primarily of student housing, it is assumed that a large number of these residents will utilize public transit or walk/bike to campus des-



## Traffic Study

tinations in reasonable close proximity. This site is along the existing Razorback Transit route. Projected vehicle and pedestrian traffic volumes were calculated for the proposed student housing residential development. These projected vehicle and pedestrian site-generated trips were added to the existing traffic volumes. Existing and projected traffic conditions at the study intersections were calculated and analyzed. These volumes have been adjusted to exclude the traffic volumes already in existing traffic volume counts which are associated with the existing land uses (approximate 31-unit apartment development plus a triplex and five single-family residential houses) to be replaced by the proposed development.

Findings of this study are summarized as follows:

- Approximately 1,102 vehicle trips (combined in and out) per average weekday are projected to be generated by the proposed residential student housing land use on this site. Of this total, approximately 79 vehicle trips are estimated during the traffic conditions of the AM peak hour, approximately 90 vehicle trips are estimated during the traffic conditions of the school PM peak hour and approximately 154 vehicle trips are estimated during the traffic conditions of the PM peak hour.
- Capacity and LOS analysis results for existing traffic conditions for the study intersections indicate existing vehicle movements for existing traffic conditions at the study intersections presently operate at what calculates as an acceptable LOS “D” or better for the AM, school PM and typical PM peak hours.
- Capacity and LOS analysis results performed for projected traffic conditions for the AM, school PM and typical PM peak hours for the study intersections with the proposed widening of Center Street at Duncan Avenue and at Harmon Avenue to accommodate eastbound and westbound left-turn lane lanes and with traffic signal control at Center Street and Duncan Avenue and 4-way “Stop” sign control at Center Street and Harmon Avenue, indicate all vehicle movements at the study intersections are expected to operate at what calculates as an acceptable LOS “C” or better for the AM, school PM and typical PM peak hours. However, without traffic signal control at Cen-

## Traffic Study

ter Street and Duncan Avenue, the westbound vehicle movements at this intersection are expected to operate at what calculates as LOS "E" during the PM peak hour.

- West Center is in close proximity to the University of Arkansas campus and is along an existing Razorback Transit route. This will facilitate transit usage, biking and walking by residents and have the effect of reducing vehicular traffic generation.
- The access drives proposed to serve the West Center development will intersect Harmon Avenue and Duncan Avenue only with no direct access via Center Street. Access via Harmon Avenue and Duncan Street is better than direct access on higher volume Center Street providing; fewer non-site traffic volume conflicts with ingress and egress to the site.
- Even though the intersection of Center Street and Duncan Avenue is currently traffic signal controlled, based on volume criteria set out in the MUTCD, it was found that traffic signal warrants are currently not met for the intersection of Center Street and Duncan Avenue with existing traffic volumes. Traffic signal warrants at this intersection are not projected to be met with full build-out of this development. However, traffic control at this intersection is expected to improve traffic operations and mitigate intersection sight distance limitation if a traffic signal is installed.
- Based on volume criteria set out in the MUTCD, it was found that traffic signal warrants are currently not met for the intersection of Center Street and Harmon Avenue with existing traffic volumes. Furthermore, traffic signal warrants at this intersection are not projected to be met with full build-out of this development.

Recommendations of this study are summarized as follows:

- It is recommended to widen Center Street at Duncan Avenue and at Harmon Avenue to accommodate the addition of an eastbound and westbound left-turn lane at each of these intersections.
- It is recommended to construct the site access drive proposed to intersect Harmon Avenue to consist of an inbound lane and an outbound lane.

- It is recommended to construct the site access drive proposed to intersect Duncan Avenue to consist of an outbound lane only.
- Intersection modifications at Center Street and Duncan Avenue and at Center Street and Harmon Avenue and the new access site drives must conform to the City of Fayetteville design standards and will require approval by the City.
- If the existing traffic signal at Center Street and Duncan Avenue is replaced to accommodate the addition of an eastbound and westbound left-turn lane on Center Street, it is recommended that provisions for pedestrians be accommodated in the new traffic signal design and well-defined pedestrian crosswalks be provided across the north and west legs of this intersection.
- Since all vehicles will be required to stop at Center Street and Harmon Avenue with 4-way “Stop” sign control at this intersection (and with well defined painted crosswalks), that should provide pedestrians ample opportunity to cross and painted crosswalks and required MUTCD signage should be sufficient at this intersection.
- If traffic signal control is not installed at the intersection of Center Street and Duncan Avenue or if the intersection of Center Street and Harmon Avenue is not a 4-way “Stop” sign controlled intersection, it is recommended to install new crosswalks and required MUTCD signs at these intersections. These crosswalks could be constructed as a raised crosswalk with embedded LED lights in pavement to also serve to reduce speed by vehicles on Harmon Avenue in the vicinity due to the existing high pedestrian activity observed in this area.
- It is recommended to install pedestrian crossing warning signs per standards of the MUTCD for traffic exiting the site drives approaching Harmon Avenue and approaching Duncan Avenue. Also, it is recommended to include pedestrian crosswalk markings at the site access drive adjacent to Harmon Avenue and Duncan Avenue.

## STREET SYSTEM

**Center Street**, at the site between Duncan Avenue and Harmon Avenue, is approximately 28 feet wide consisting of an eastbound lane and a westbound lane. This roadway is asphalt and constructed with curbs and gutters. There are sidewalks along the north side of Center Street between Duncan Avenue and Harmon Avenue. Center Street is classified as a Local Street on the City of Fayetteville Master Street Plan (MSP).

**Duncan Avenue**, south of Center Street, is approximately 20 feet wide with no pavement markings separating the northbound and southbound lanes. This roadway is asphalt and constructed with curbs and gutters. There are sidewalks along the west side of the street in the immediate vicinity of the site. Duncan Avenue, north of Center Street, is 28-feet wide consisting of a northbound lane and a southbound lane with sidewalks along both sides of the roadway. Duncan Avenue is classified as a Local Street on the City MSP.

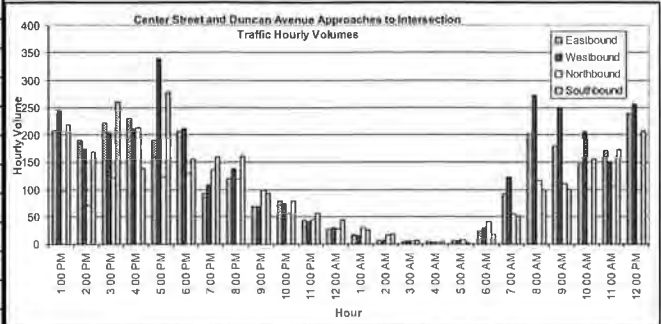
**Harmon Avenue**, south of Center Street, is approximately 36 feet wide with no pavement markings separating the northbound and southbound lanes. This roadway is asphalt and constructed with drainage ditches, except along the west side of the roadway, immediately south of Center Street (curbs and gutters with sidewalk). Harmon Avenue, north of Center Street, is 22 feet wide consisting of a northbound lane and a southbound lane with sidewalks along the east side of the roadway. Harmon Avenue is classified as a Local Street on the City MSP.

The intersection of Center Street and Duncan Avenue is signalized. This is a 2-phase traffic signal operation with signal indications mounted on span wires. The traffic signal does not comply with MUTCD standards. The controller is located on the southwest corner of this intersection. There is a pedestrian crosswalk along the north leg of this intersection.

The following photos show the general layout of Center Street, Harmon Avenue and Duncan Avenue. These were taken at locations as indicated on the photo captions.

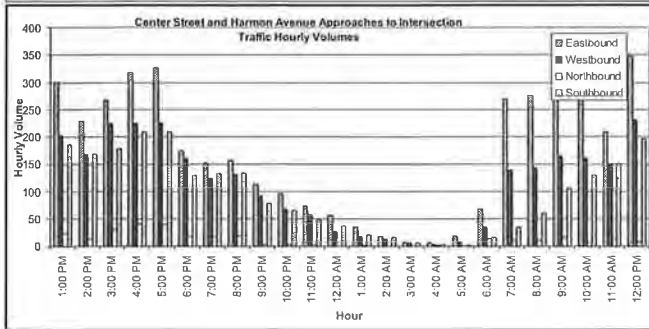
# Traffic Study

TIME	Center Street and Duncan Avenue Approaches to Intersection			
	Center Street		Duncan Avenue	
	Eastbound	Westbound	Northbound	Southbound
01:00 PM	208	245	95	218
02:00 PM	190	174	70	168
03:00 PM	222	204	121	260
04:00 PM	230	212	213	139
05:00 PM	190	339	122	278
06:00 PM	207	212	129	155
07:00 PM	94	108	136	160
08:00 PM	120	138	118	161
09:00 PM	69	68	98	94
10:00 PM	77	75	56	78
11:00 PM	43	41	44	56
12:00 AM	27	29	28	44
01:00 AM	16	15	29	25
02:00 AM	7	6	17	18
03:00 AM	4	6	5	6
04:00 AM	4	3	3	4
05:00 AM	5	6	8	1
06:00 AM	24	29	41	18
07:00 AM	92	122	55	51
08:00 AM	203	273	116	99
09:00 AM	180	250	111	101
10:00 AM	146	205	99	156
11:00 AM	171	151	104	172
12:00 PM	240	257	100	208
<b>24-Hour Total:</b>	<b>2769</b>	<b>3168</b>	<b>1918</b>	<b>2670</b>



**Table 1—Chart 1 24-Hour Traffic Counts  
Center Street and Duncan Avenue  
Approaches to Intersection**

**Table 2—Chart 2 24-Hour Traffic Counts  
Center Street and Harmon Avenue  
Approaches to Intersection**



TIME	Center Street and Harmon Avenue Approaches to Intersection			
	Center Street		Harmon Avenue	
	Eastbound	Westbound	Northbound	Southbound
01:00 PM	301	202	23	186
02:00 PM	228	168	13	168
03:00 PM	267	224	31	178
04:00 PM	319	224	41	209
05:00 PM	327	225	39	209
06:00 PM	174	161	18	129
07:00 PM	151	124	17	133
08:00 PM	157	131	19	134
09:00 PM	114	92	3	78
10:00 PM	96	68	3	65
11:00 PM	72	57	3	47
12:00 AM	56	27	0	37
01:00 AM	34	18	1	21
02:00 AM	18	13	0	15
03:00 AM	7	5	0	5
04:00 AM	5	3	1	3
05:00 AM	18	7	0	1
06:00 AM	67	35	13	15
07:00 AM	269	139	10	34
08:00 AM	276	143	10	60
09:00 AM	373	164	15	106
10:00 AM	319	161	7	130
11:00 AM	209	150	12	150
12:00 PM	348	230	8	196
<b>24-Hour Total:</b>	<b>4205</b>	<b>2771</b>	<b>287</b>	<b>2309</b>

## PEDESTRIANS



MUTCD Sign W11-2

It was observed that there is considerable pedestrian activity in the vicinity of this proposed development because of the proximity to the University of Arkansas and Fayetteville High School. Pedestrian traffic has been included in the capacity and LOS analysis. Pedestrian traffic should be taken into consideration Center Street and Duncan Avenue, Center Street and Harmon Avenue and at the proposed access drives.

It is recommended to install pedestrian crossing warning signs per the MUTCD (as shown to the left) for traffic exiting the site drive approaching Harmon Avenue and approaching Duncan Avenue. Also, it is recommended to include pedestrian crosswalk markings across the site access drives. Additionally, it is recommended to install a new crosswalk (and required MUTCD signs) across the west and south legs of Center Street and Harmon Avenue. If the intersection of Center Street and Harmon Avenue is not a 4-way "Stop" sign controlled intersection, the recommended crosswalk on the east leg of this intersection (across Center Street) could be constructed as a raised crosswalk with embedded LED lights in pavement to also serve to reduce speed by vehicles on Center Street in the vicinity. Examples are shown on the following page.

Since all vehicles will be required to stop at Center Street and Harmon Avenue with 4-way "Stop" sign control at this intersection (and with well defined painted crosswalks), that should provide pedestrians ample opportunity to cross and painted crosswalks and required MUTCD signage should be sufficient at this intersection.

If the traffic signal at Center Street and Duncan Avenue is replaced to account for the additional lanes on Center Street, provisions should also be included for pedestrians at this intersection and a new crosswalk should be provided along the east leg (across Center Street) of this intersection. The north leg of this intersection already has a crosswalk.

Additionally, the frontage of the site to public streets should include pedestrian sidewalk provision as can be expected to be a City requirement.

## CAPACITY ANALYSIS

### Level of Service Analysis Results

#### Existing Traffic Conditions

Capacity and level of service analysis was performed for existing traffic volumes (vehicles and pedestrians), lane geometry and traffic control for the AM, school PM and typical PM peak hours for the following intersections:

- Center Street and Duncan Avenue
- Center Street and Harmon Avenue.

As indicated in Table 4, "Level of Service Summary – Existing Traffic Conditions," all existing vehicle movements for existing traffic conditions at the study intersections presently operate at what calculates as an acceptable LOS "D" or better for the AM, school PM and typical PM peak hours.

Traffic volumes used for this analysis are shown on Figure 3, "Existing Traffic Volumes - AM and PM Peak Hours," and Figure 3A, "Existing Traffic Volumes - School PM Peak Hour."

EXISTING TRAFFIC CONDITIONS		Traffic Control	EB LT	EB TH	EB RT	WB LT	WB TH	WB RT	NB LT	NB TH	NB RT	SB LT	SB TH	SB RT	Overall Intersection
INTERSECTION	PEAK HR		PEAK HOUR - LEVEL OF SERVICE												
Center Street and Duncan Avenue	AM	SIGNAL		B		B		A		A		A		B	
	School PM		A		A		A		A		A		A		
	PM		B		B		A		A		B		B		
Center Street and Harmon Avenue	AM	STOP SIGN		A		A		D		C		C		n/a	
	School PM		A		A		B		C		C		n/a		
	PM		A		A		C		C		C		n/a		

**Table 4 - Level of Service Summary - Existing Traffic Conditions**

PROJECTED TRAFFIC CONDITIONS		Traffic Control	EB LT	EB TH	EB RT	WB LT	WB TH	WB RT	NB LT	NB TH	NB RT	SB LT	SB TH	SB RT	Overall Intersection
INTERSECTION	PEAK HR		PEAK HOUR - LEVEL OF SERVICE												
Center Street and Duncan Avenue	AM	4-WAY "STOP" SIGN	B	B	B	B			B			B			n/a
	School PM		B	B	B	B			B			B			n/a
	PM		B	B	E	E			C			C			n/a
	AM	SIGNAL	B	B	B	C			B			B			B
	School PM		B	C	B	C			A			A			B
	PM		B	B	B	C			B			B			B
Center Street and Harmon Avenue	AM	4-WAY "STOP" SIGN	B	B	B	B			A			A			n/a
	School PM		B	B	B	B			A			B			n/a
	PM		B	B	C	C			B			C			n/a
Harmon Avenue and Drive A	AM	"STOP" SIGN				A			A			A			n/a
	School PM					A			A			A			n/a
	PM					A			A			A			n/a
Duncan Avenue and Drive B	AM	"STOP" SIGN	A		A				A				A		n/a
	School PM		A		A				A				A		n/a
	PM		A		A				A				A		n/a

**Table 5 - Level of Service Summary - Projected Traffic Conditions**

Projected traffic conditions were conducted with the following assumed:

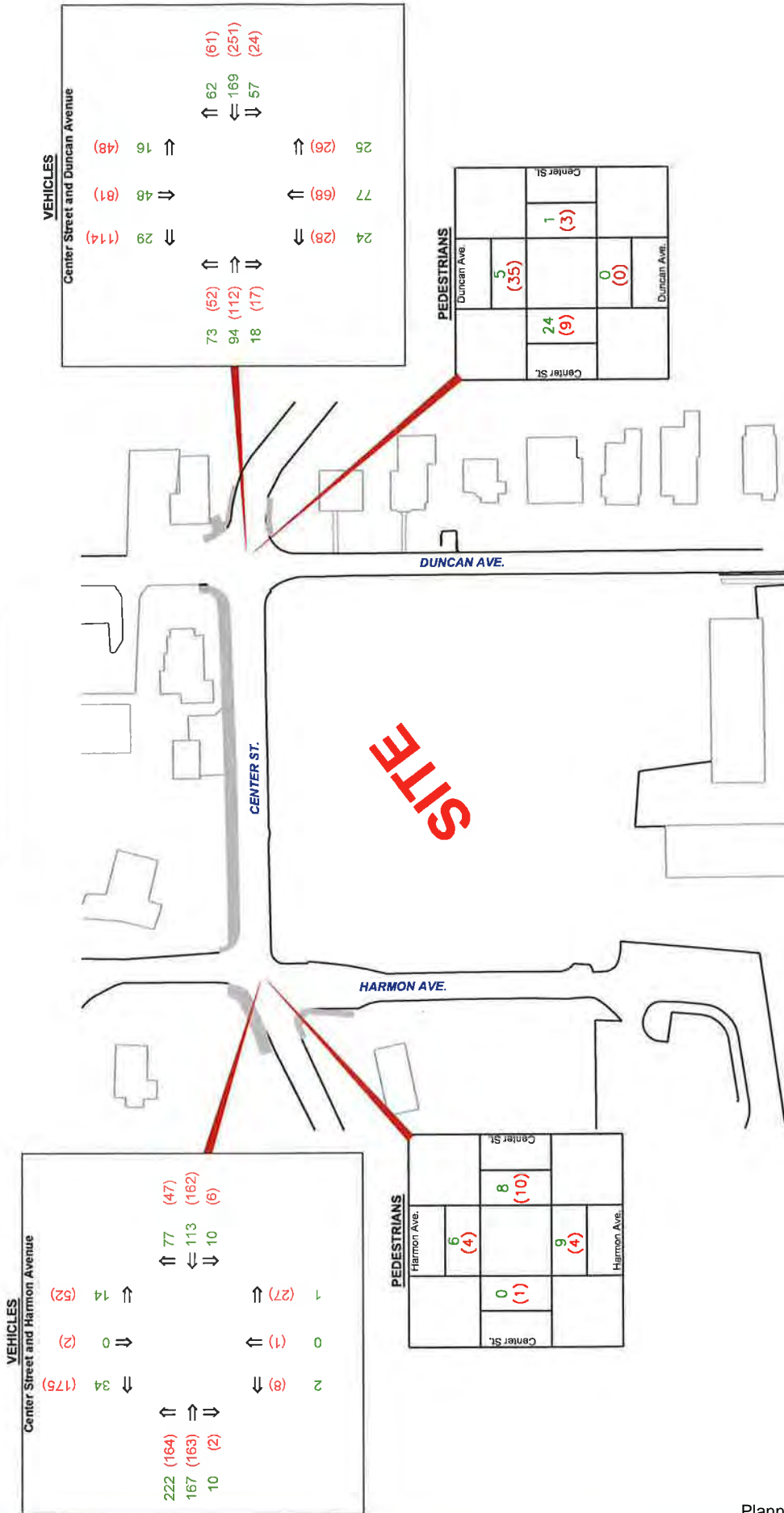
- o Widening of Center Street at Duncan Avenue and at Harmon Avenue to accommodate eastbound and westbound left-turn lane lanes at each of these intersections.
- o With and without traffic signal control at Center Street and Duncan Avenue.
- o Center Street and Harmon Avenue as a 4-way "Stop" sign controlled intersection.
- o Drive A constructed as a fully-directional access drive to consist of an inbound lane and an outbound lane at Harmon Avenue.
- o Drive B constructed as an outbound only access drive to consist of one outbound lane at Duncan Avenue.





PEAK HOURS KEY

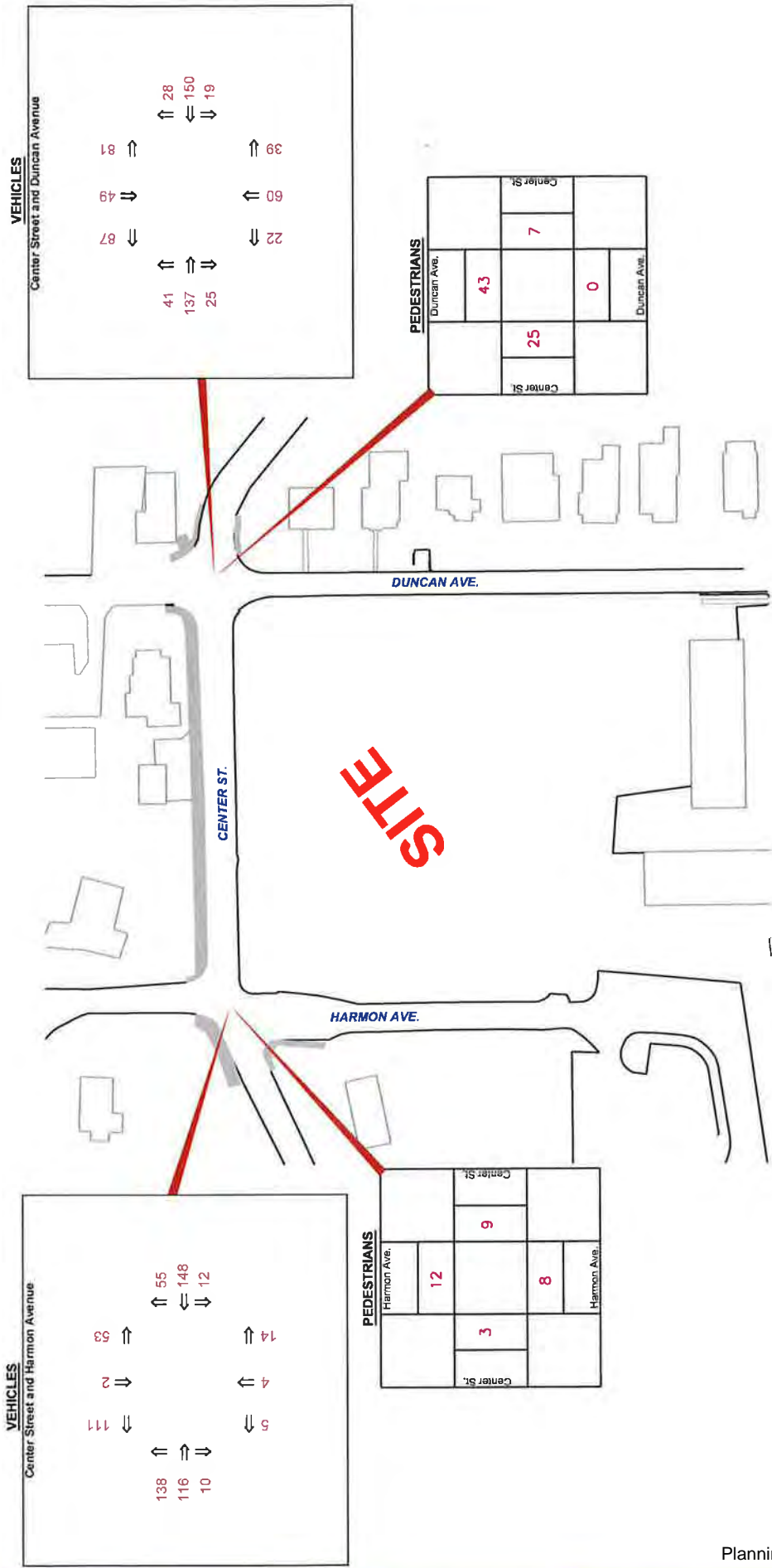
xxx = AM Peak Hour  
(xxx) = PM Peak Hour





PEAK HOURS KEY

xxx = School PM Peak Hour

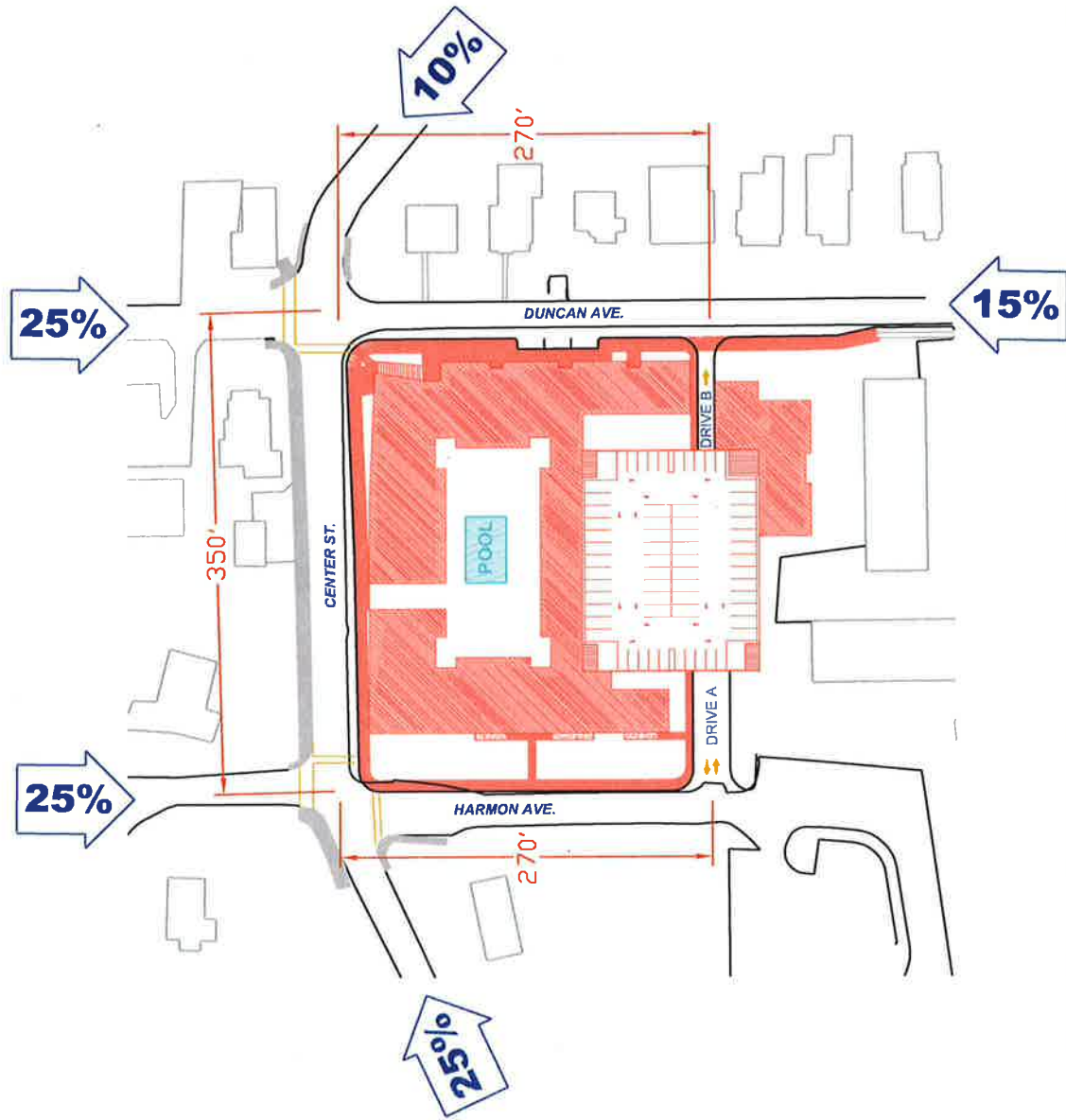


EXISTING  
TRAFFIC VOLUMES  
SCHOOL PM PEAK HOUR  
FIGURE NO. 3A

WEST CENTER  
STUDENT HOUSING  
RESIDENTIAL DEVELOPMENT  
FAYETTEVILLE, ARKANSAS

PROJECT No. P1604  
DATE: 1-7-2013  
PETERS & ASSOCIATES  
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DIRECTIONAL DISTRIBUTION  
SITE TRAFFIC

WEST CENTER  
STUDENT HOUSING  
RESIDENTIAL DEVELOPMENT  
FAYETTEVILLE, ARKANSAS

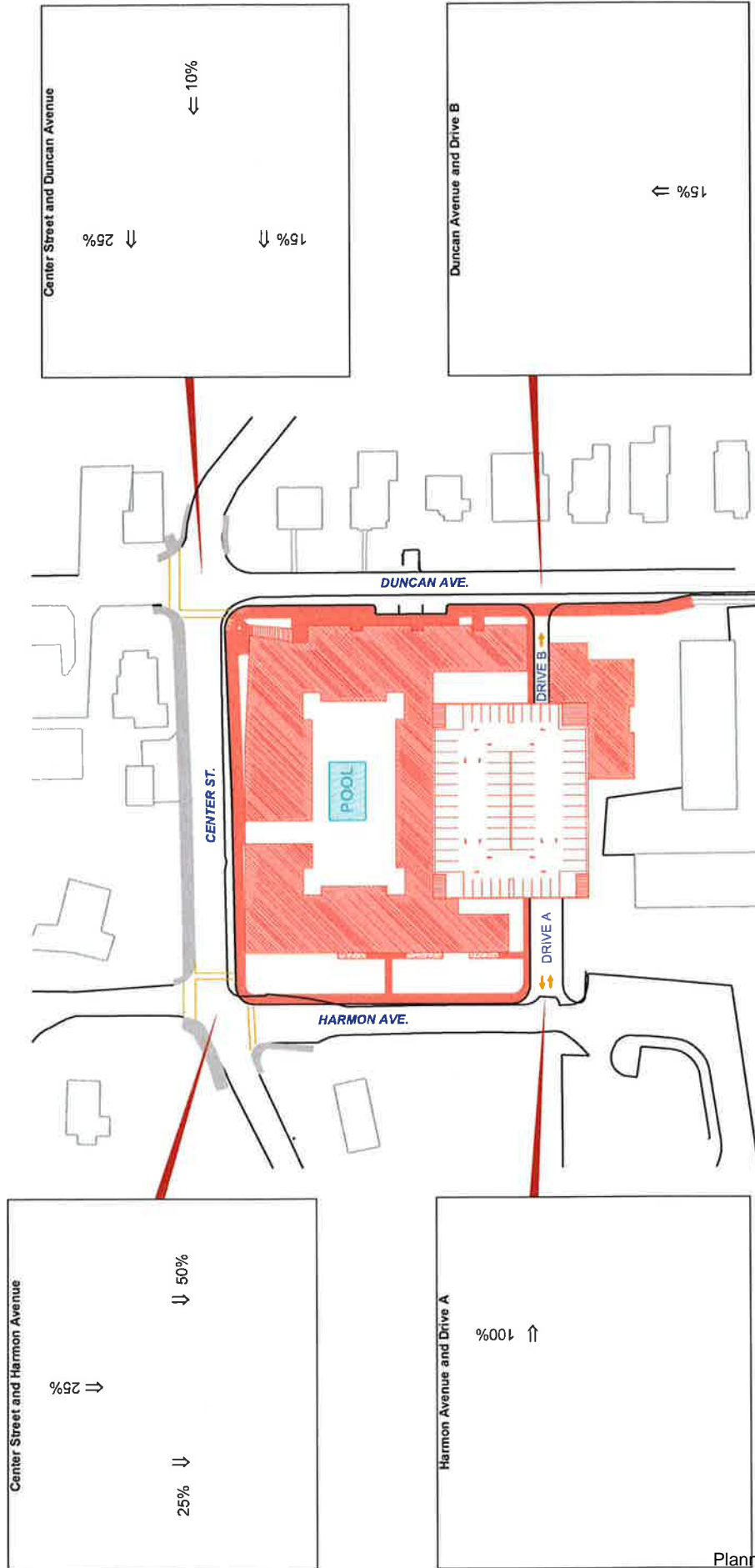
FIGURE NO.  
**4**

PROJECT No. P1604

DATE: 1-7-2013

PETERS & ASSOCIATES  
ENGINEERS, INC.





ENTERING TRAFFIC  
PERCENTAGE TURNS

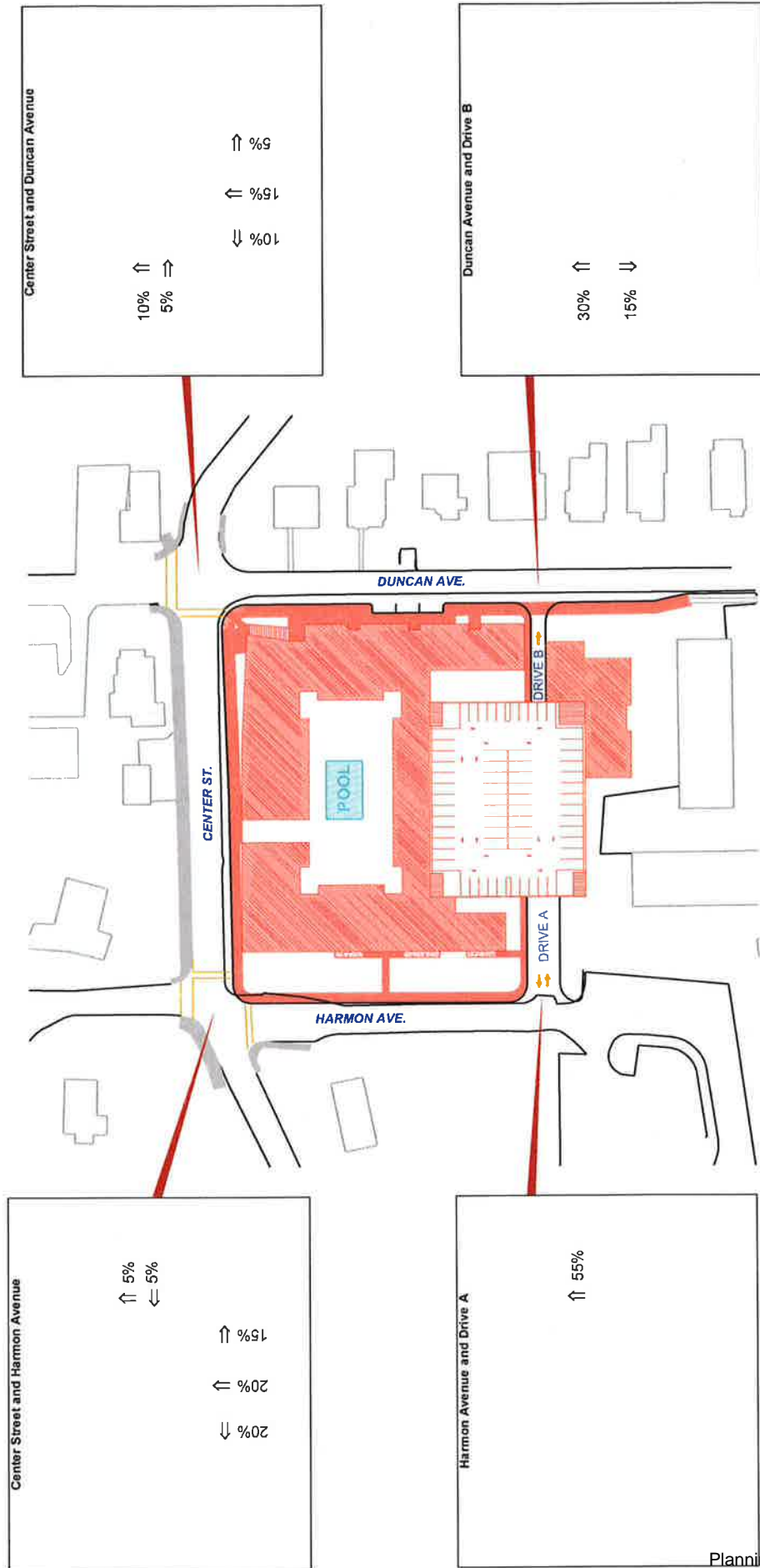
WEST CENTER  
STUDENT HOUSING  
RESIDENTIAL DEVELOPMENT  
FAYETTEVILLE, ARKANSAS

FIGURE NO.  
**5**

PROJECT No. P1604  
DATE: 1-7-2013

**PETERS & ASSOCIATES**  
ENGINEERS, INC.





**EXITING TRAFFIC  
PERCENTAGE TURNS**

**WEST CENTER  
STUDENT HOUSING  
RESIDENTIAL DEVELOPMENT  
FAYETTEVILLE, ARKANSAS**

FIGURE NO. **6**

PROJECT No. P1604  
DATE: 1-7-2013

**PETERS & ASSOCIATES  
ENGINEERS, INC.**

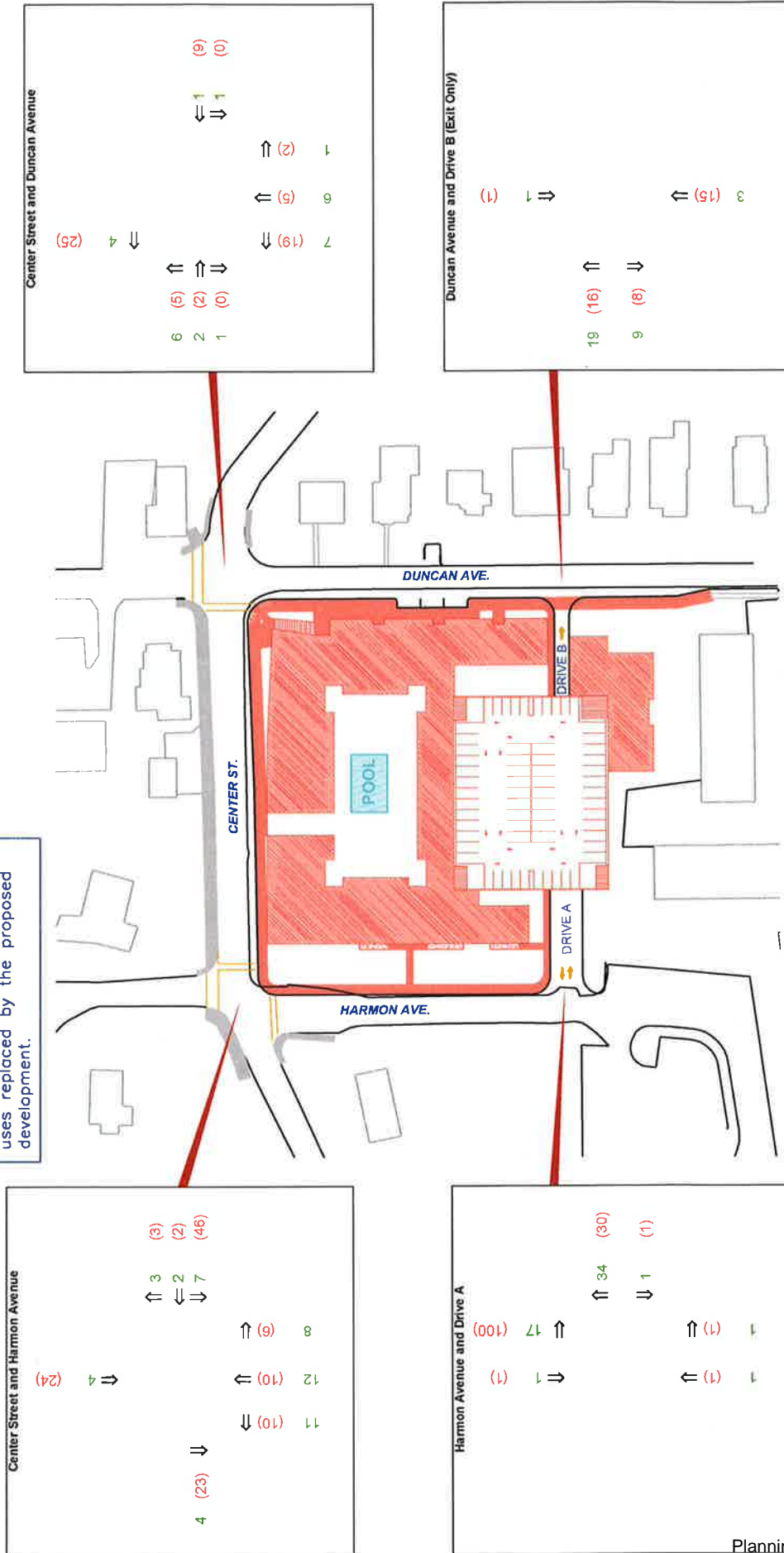




**PEAK HOURS KEY**

xxx = AM Peak Hour  
(xxx) = PM Peak Hour

NOTE: These volumes include a reduction to vehicle traffic to account for likely pedestrian traffic and Razorback Transit riders. Additionally, these volumes have been adjusted to exclude the traffic volumes associated with the existing land uses replaced by the proposed development.



**SITE-GENERATED  
TRAFFIC VOLUMES  
AM AND PM PEAK HOURS**  
FIGURE No. **7**

**WEST CENTER  
STUDENT HOUSING  
RESIDENTIAL DEVELOPMENT**  
FAYETTEVILLE, ARKANSAS

PROJECT No. P1604  
DATE: 1-7-2013  
**PETERS & ASSOCIATES**  
ENGINEERS, INC.





**PEAK HOURS KEY**

xxx = School PM Peak Hour

NOTE: These volumes include a reduction to vehicle traffic to account for likely pedestrian traffic and Razorback Transit riders. Additionally, these volumes have been adjusted to exclude the traffic volumes associated with the existing land uses replaced by the proposed development.



**SITE-GENERATED  
TRAFFIC VOLUMES  
SCHOOL PM PEAK HOUR**  
FIGURE NO. **7A**

**WEST CENTER  
STUDENT HOUSING  
RESIDENTIAL DEVELOPMENT**  
FAYETTEVILLE, ARKANSAS

PROJECT No. P1604  
DATE: 1-7-2013

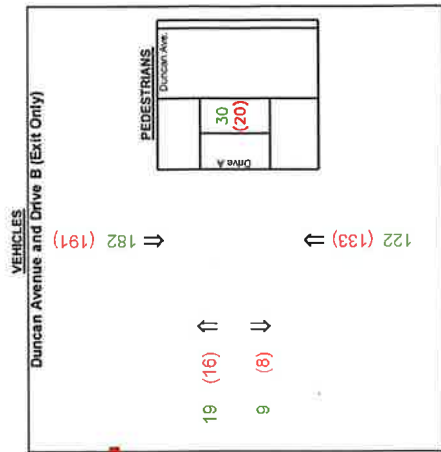
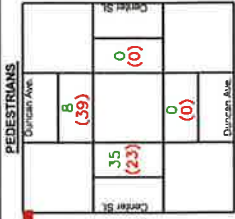
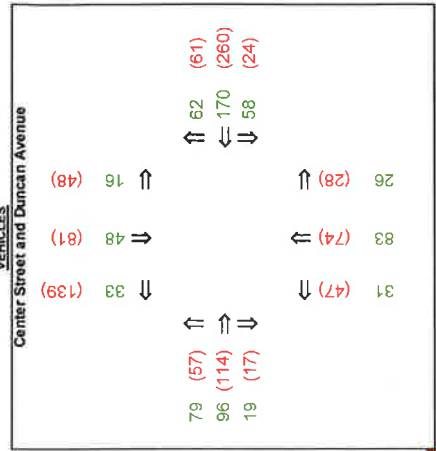
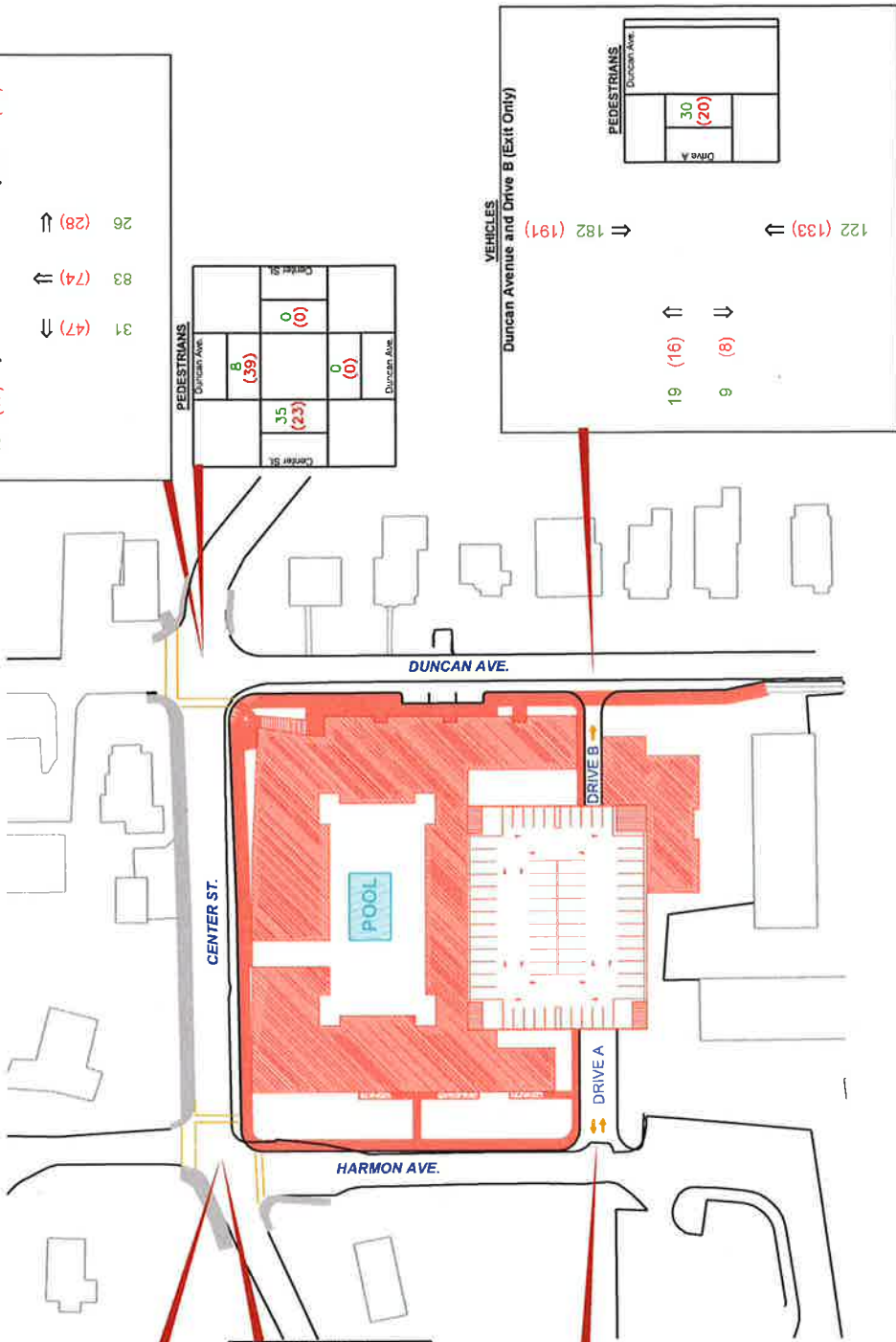
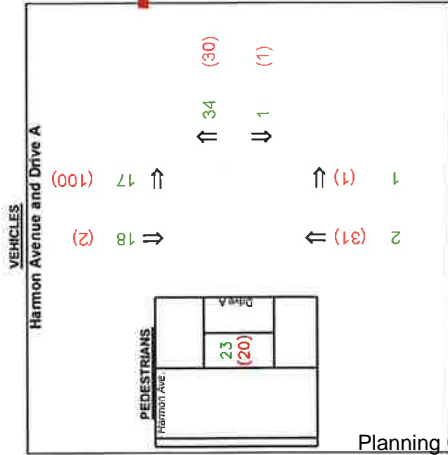
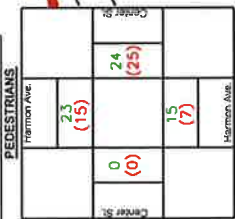
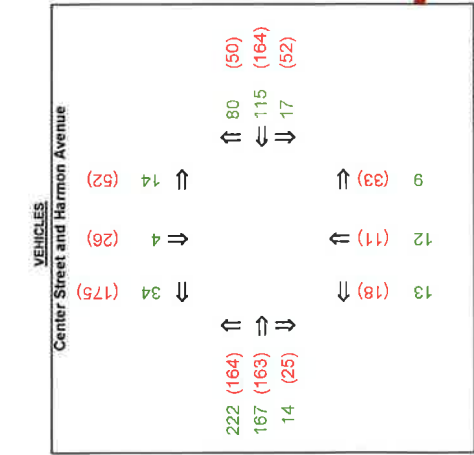
**PETERS & ASSOCIATES  
ENGINEERS, INC.**





**PEAK HOURS KEY**  
 xxx = AM Peak Hour  
 (xxx) = PM Peak Hour

**NOTE:** These volumes include a reduction to vehicle traffic to account for likely pedestrian traffic and Razorback Transit riders. Additionally, these volumes have been adjusted to exclude the traffic volumes associated with the existing land uses replaced by the proposed development.



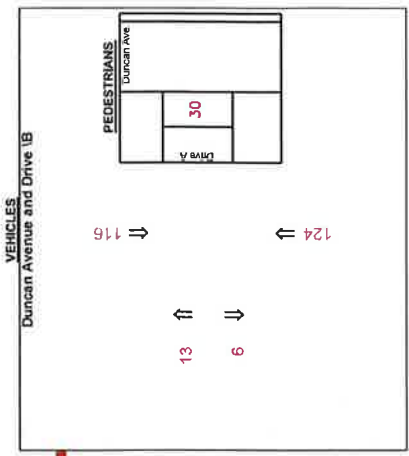
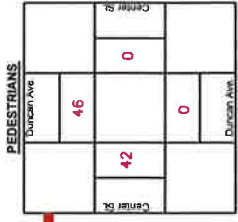
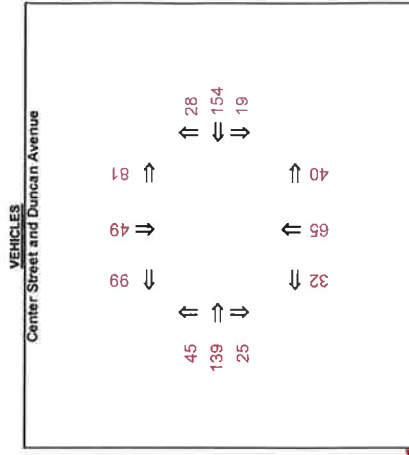
PROJECTED  
 TRAFFIC VOLUMES  
 AM AND PM PEAK HOURS  
 FIGURE NO. 8

WEST CENTER  
 STUDENT HOUSING  
 RESIDENTIAL DEVELOPMENT  
 FAYETTEVILLE, ARKANSAS

PROJECT No. P1604  
 DATE: 1-7-2013  
 PETERS & ASSOCIATES  
 ENGINEERS, INC.



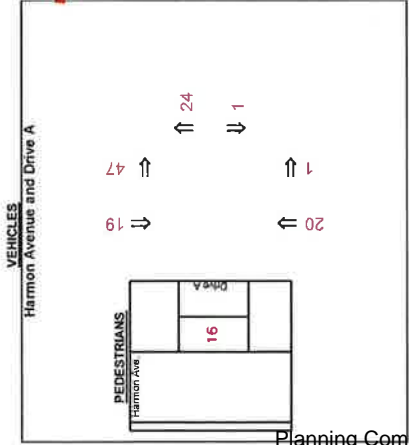
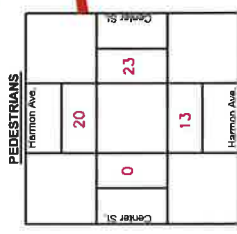
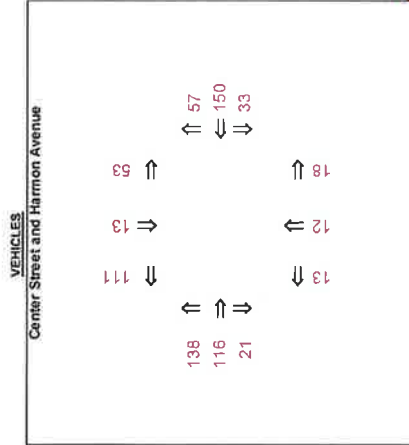
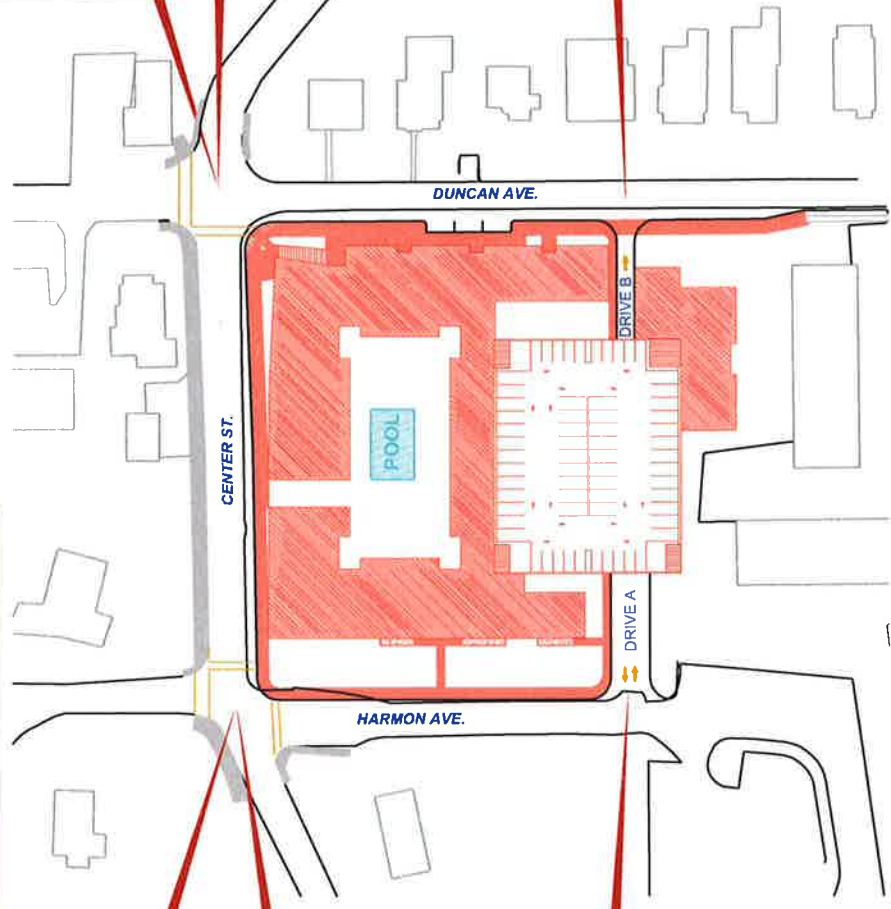




**PEAK HOURS KEY**

xxx = School PM Peak Hour

NOTE: These volumes include a reduction to vehicle traffic to account for likely pedestrian traffic and Razorback Transit riders. Additionally, these volumes have been adjusted to exclude the traffic volumes associated with the existing land uses replaced by the proposed development.



PROJECTED TRAFFIC VOLUMES  
SCHOOL PM PEAK HOUR  
FIGURE NO. 8A

WEST CENTER STUDENT HOUSING  
RESIDENTIAL DEVELOPMENT  
FAYETTEVILLE, ARKANSAS

PROJECT No. P1604  
DATE: 1-7-2013  
PETERS & ASSOCIATES  
ENGINEERS, INC.



# Rectangular Rapid Flash Beacon (RRFB)

May 2009  
FHWA-SA-09-009

## Purpose

According to the National Highway Traffic Safety Administration, there were a total of 14,340 pedestrian fatalities and 193,000 pedestrian injuries resulting from pedestrian vehicle crashes nationwide during the 2004-2006 period. Rectangular Rapid Flash Beacons (RRFB) can enhance safety by reducing crashes between vehicles and pedestrians at unsignalized intersections and mid-block pedestrian crossings by increasing driver awareness of potential pedestrian conflicts.

## Alternative Names

Light Emitting Diode (LED) Rapid-Flash System, Stutter Flash or LED Beacons.

## Operation

- RRFBs are user-actuated amber LEDs that supplement warning signs at unsignalized intersections or mid-block crosswalks. They can be activated by pedestrians manually by a push button or passively by a pedestrian detection system.
- RRFBs use an irregular flash pattern that is similar to emergency flashers on police vehicles.
- RRFBs may be installed on either two-lane or multi-lane roadways.

This summary is one in a series describing Innovative Intersection Safety Treatments. The summaries identify new technologies and techniques to improve intersection safety developed since NCHRP Report 500, Volumes 5 and 12, were published in 2003 and 2004, respectively. These treatments show promise for improving safety but comprehensive effectiveness evaluations are not yet available.

## Potential Benefits

- RRFBs are a lower cost alternative to traffic signals and hybrid signals that are shown to increase driver yielding behavior at crosswalks significantly when supplementing standard pedestrian crossing warning signs and markings.
- An official FHWA-sponsored experimental implementation and evaluation conducted in St. Petersburg, Florida found that RRFBs at pedestrian crosswalks are dramatically more effective at increasing driver yielding rates to pedestrians than traditional overhead beacons.
- The novelty and unique nature of the stutter flash may elicit a greater response from drivers than traditional methods.
- The addition of RRFB may also increase the safety effectiveness of other treatments, such as the use of advance yield markings with YIELD (or STOP) HERE FOR PEDESTRIANS signs. These signs and markings are used to reduce the incidence of multiple-threat crashes at crosswalks on multi-lane roads (i.e., crashes where a vehicle in one lane stops to allow a pedestrian to cross the street while a vehicle in an adjacent lane, traveling in the same direction, strikes the pedestrian), but alone they only have a small effect on overall driver yielding rates.

## Agency Experience

"An Analysis of the Effects of Stutter Flash LED Beacons to Increase Yielding to Pedestrians Using Multilane Crosswalks," along with "The Use of Stutter Flash LED Beacons to Increase Yielding to Pedestrians at Crosswalks," presented at the Transportation Research Board Annual Meeting in 2008, summarized the results of two studies on the effects of RRFBs when used to supplement standard pedestrian crossing warning signs at crosswalks.<sup>1</sup>

The former found that going from a no-beacon arrangement to a two-beacon system, mounted on the supplementary warning sign on the right side of the crossing, increased yielding from 18 percent to 81 percent. There was a further increase in yielding behavior, with a four-beacon system (with two beacons on both the right and left side of the crossing) to 88 percent. "An Analysis of the Effects of Stutter Flash LED Beacons to Increase Yielding to Pedestrians

Using Multilane Crosswalks" also evaluated the sites over a 1-year period, and found that there was little to no decrease in yielding behavior over time.

### Implementation Considerations

- Including RRFBs on the roadside increases driver yielding behavior significantly. Including RRFBs on a center island or median as well can further increase driver yielding behavior, although with a lower marginal benefit than roadside beacons.
- RRFBs can use manual push-buttons or automated passive (e.g., video or infrared) pedestrian detection, and should be unlit when not activated.
- RRFBs typically receive power by standalone solar panel units, but may also be wired to a traditional power source.

#### Manual on Uniform Traffic Control Devices (MUTCD) Specifications

- The MUTCD gave interim approval to RRFBs for optional use in limited circumstances in July 2008. The interim approval allows for usage as a warning beacon to supplement standard pedestrian crossing warning signs and markings at either a pedestrian or school crossing; where the crosswalk approach is not controlled by a yield sign, stop sign, or traffic-control signal; or at a crosswalk at a roundabout.
- The MUTCD interim approval memo also contains other provisions for the implementation of the device and should be reviewed



Figure 1: Activated, solar-powered RRFB on a center island at an unsignalized intersection—beacons flash using an irregular flash pattern that is similar to emergency flashers on police vehicles



Figure 2: Activated, solar-powered, roadside RRFB at a mid-block crosswalk

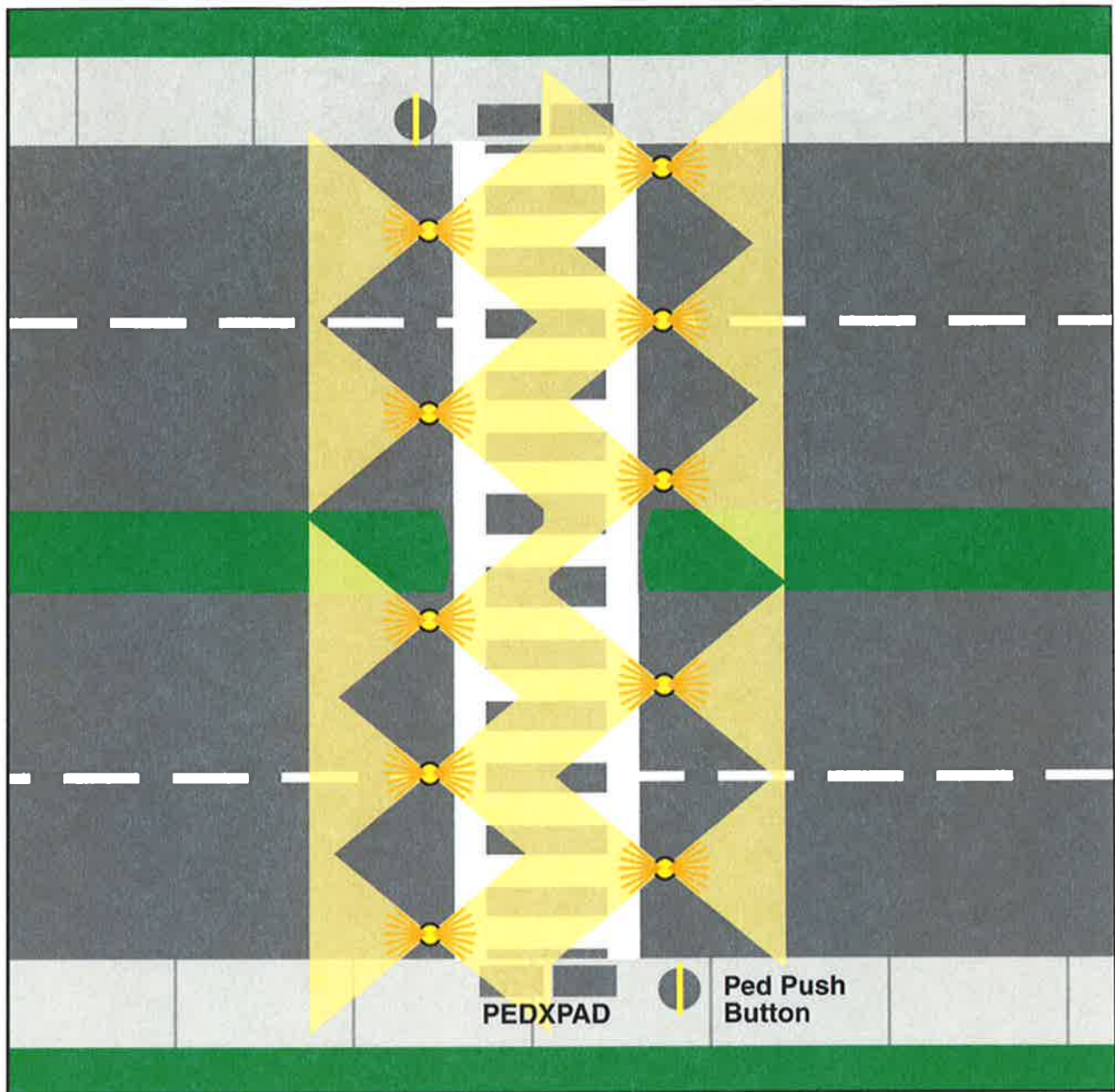


Figure 3: Combined roadside and median system of solar-powered RRFB

([http://mutcd.fhwa.dot.gov/resources/interim\\_approval/ia11/fhwamemo.htm](http://mutcd.fhwa.dot.gov/resources/interim_approval/ia11/fhwamemo.htm)).

### Costs

- Cost is approximately \$10,000 to \$15,000 for purchase and installation of two units (one on either side of a street). This includes solar panels for powering the units, pad lighting, indication units (for both sides of street) with RRFBs in the back and front of each unit, signage on both approaches, all posts, and either passive infrared detection or push buttons with audio instructions.
- Costs would be proportionately higher for additional units placed on a median island, etc.





View from intersection of Center Street and Duncan Avenue looking southwest

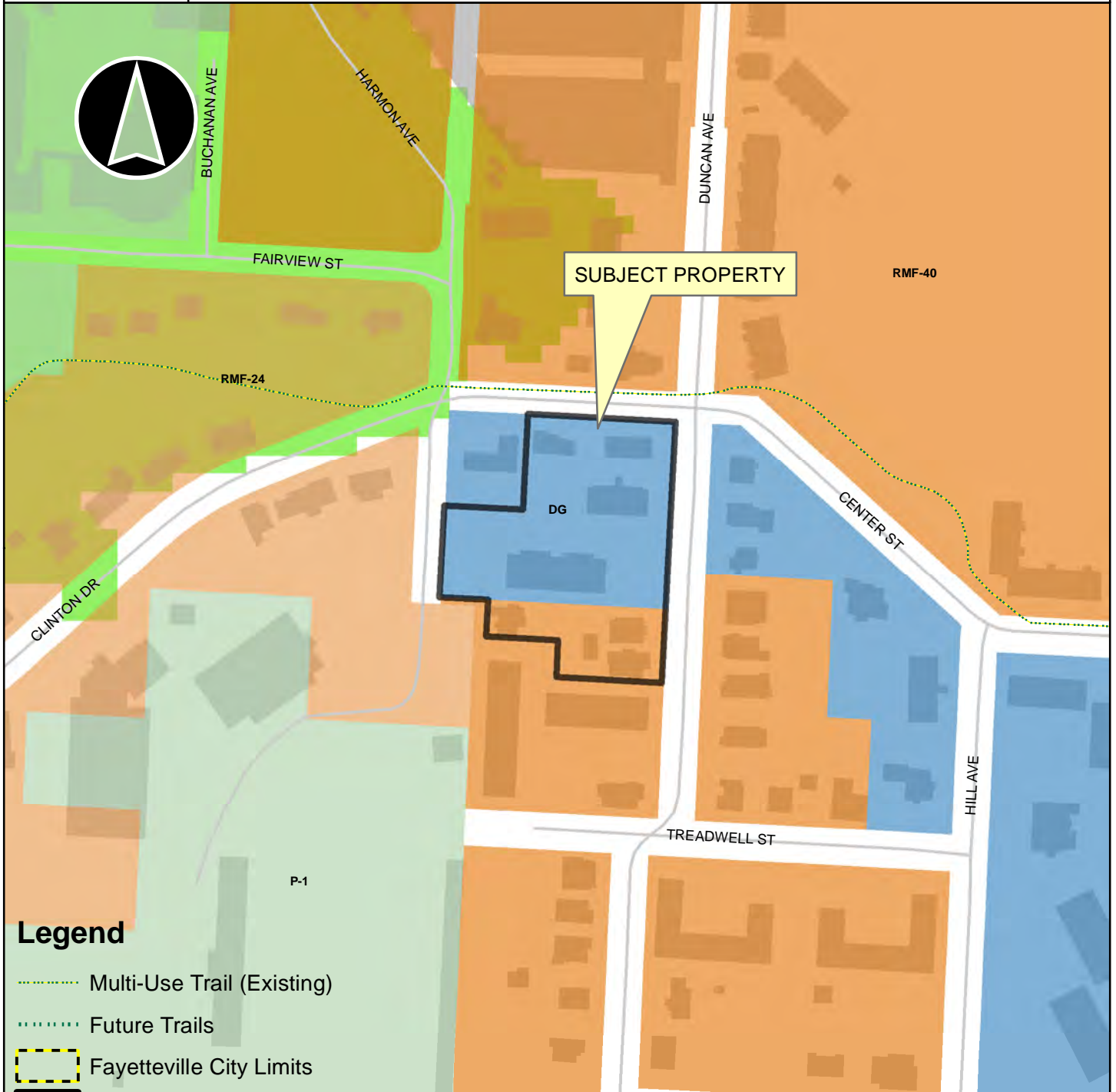




LSD12-4275

# WEST CENTER

Close Up View



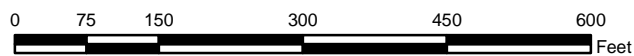
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- Multi-Use Trail (Existing)
- Future Trails
- Fayetteville City Limits

## Overview

LSD12-4275

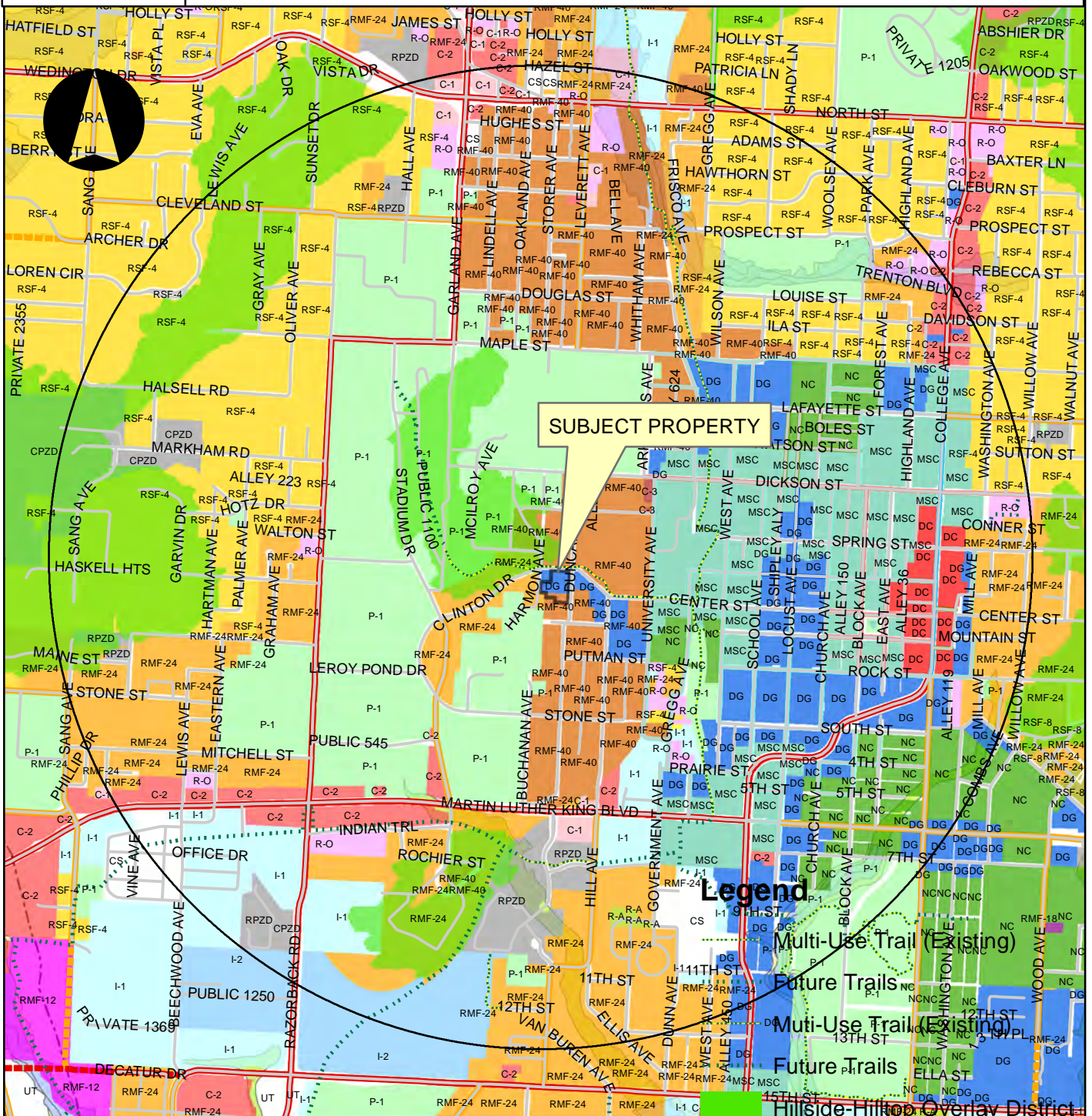
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- Hillside-Hilltop Overlay District
- Design Overlay District
- Design Overlay District
- Planning Area



LSD12-4275

# WEST CENTER

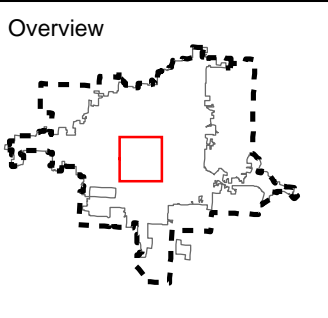
One Mile View



SUBJECT PROPERTY

### Legend

- Multi-Use Trail (Existing)
- Future Trails
- Multi-Use Trail (Existing)
- Future Trails
- Hillside-Hilltop Overlay District



Legend

- Subject Property
- LSD12-4275
- Boundary
- Design Overlay District
- Planning Area
- Fayetteville

0      0.25      0.5      1  
 Miles

LSD12-4275

Design Overlay District

Planning Area

Fayetteville

Prepared by Planning Commission  
 January 14, 2013  
 Agenda Item 4  
 LSD12-4275 West Center  
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