

CITY CLERK DEPT.

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**S E R V I C E   S O L U T I O N S   S U C C E S S**

**CITY OF EL PASO, TEXAS  
AGENDA ITEM  
DEPARTMENT HEAD'S SUMMARY FORM**



**DEPARTMENT:      ENGINEERING & CONSTRUCTION  
                                 MANAGEMENT DEPARTMENT**

**AGENDA DATE:      INTRODUCTION: JANUARY 24, 2012  
                                 PUBLIC HEARING: FEBRUARY 07, 2012**

**CONTACT PERSON NAME AND PHONE NUMBER: R. ALAN  
SHUBERT (915) 541-4423**

**DISTRICT(S) AFFECTED:    ALL**

**SUBJECT:**

AN ORDINANCE AMENDING TITLE 18 (BUILDING AND CONSTRUCTION), CHAPTER 18.08 (BUILDING CODE), SECTION 18.08.070 (FENCES), OF THE EL PASO CITY CODE, TO AMEND THE REQUIREMENTS AND STANDARDS FOR ELECTRIFIED FENCES, THE PENALTY BEING AS PROVIDED IN SECTION 18.02.107 (VIOLATIONS AND PENALTIES) OF THE EL PASO CITY CODE.

**BACKGROUND / DISCUSSION:**

The Health, Safety and Community Services Legislative Review Committee (LRC) directed staff to research the feasibility of amending current provisions to permit the construction and operation of electric security fences. Staff reviewed existing standards and benchmarked other communities to develop the proposed amendments that outline requirements for the installation and operation of electrified fences. On December 1, 2011, the LRC directed staff to forward the proposed ordinance to the full council for consideration and address additional comments made. The proposed ordinance is responsive to this request.

**PRIOR COUNCIL ACTION:**

N/A

**AMOUNT AND SOURCE OF FUNDING:**

N/A

**BOARD / COMMISSION ACTION:**

N/A

**Mayor  
John F. Cook**

**City Council**

*District 1*  
**Ann Morgan Lilly**

*District 2*  
**Susie Byrd**

*District 3*  
**Emma Acosta**

*District 4*  
**Carl L. Robinson**

*District 5*  
**Dr. Michiel R. Noe**

*District 6*  
**Eddie Holguin Jr.**

*District 7*  
**Steve Ortega**

*District 8*  
**Cortney Carlisle Niland**

**City Manager  
Joyce A. Wilson**

ORDINANCE NO. \_\_\_\_\_

AN ORDINANCE AMENDING TITLE 18 (BUILDING AND CONSTRUCTION), CHAPTER 18.08 (BUILDING CODE), SECTION 18.08.070 (FENCES), OF THE EL PASO CITY CODE, TO AMEND THE REQUIREMENTS AND STANDARDS FOR ELECTRIFIED FENCES, THE PENALTY BEING AS PROVIDED IN SECTION 18.02.107 (VIOLATIONS AND PENALTIES) OF THE EL PASO CITY CODE.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF EL PASO:

**Section 1.** That Title 18 (Building and Construction), Chapter 18.08 (Building Code), Section 18.08.070 (Fences), of the El Paso City Code be deleted in its entirety and replaced with the following:

**18.08.070 Section 424 Fences, added.**

International Building Code, 2009 Edition, Section 424 Fences, is hereby added to read as follows:

**424 Fences**

**424.1 Electrified Fences General**

To the extent that the construction of an electrified fence does not conflict with the requirements specified herein, such fence shall be constructed or installed in conformance with the specifications set forth in IEC Standard 60335-2-76.

**424.2 Definition**

**Electrified Fence** – Any fence, barrier or enclosure partially or totally enclosing a building, field or yard, carrying any electrical pulse or charge through any part, section or element thereof.

**424.3 Restricted Use**

1. The installation of an electrified fence is restricted to the following uses and zoning districts:
  - a. for control of domestic farm animals in areas zoned and actually utilized for farming or ranching activities; or for other areas where large domestic animals such as horses or cattle are legally maintained.
  - b. for the permitted uses of outdoor storage, motor vehicle storage, major utility and recycling facilities, general warehouse, contractor yard and manufacturing within the regional commercial district “C-4” except where abutting a residentially zoned property.
  - c. for installation in industrial and manufacturing districts designated as “Q”, “P-1”, “M-1” “M-2” and “M-3” as defined by Title 20 of the El Paso City Code.
2. Only battery-powered units are acceptable. Units must be approved by a Nationally Recognized Testing Laboratory (NRTL) with final installation acceptable to the Building Official.

3. The installation of an electric fence is prohibited,
  - a. within 25 feet of any outdoor area used for the handling of hazardous materials pursuant to the Fire Code,
  - b. within five feet of any public right-of-way,
  - c. where a project is adjacent to a residential zone and use,
  - d. within 300 feet of a park, church and/or school facility.

#### **424.4 Permit Required**

The installation of an electric fence requires an approved permit with the permit official. It shall be unlawful for any person to install, maintain or operate an electrified fence in violation of the provisions of this section.

1. Applications must include the following:
  - a. Site plan indicating the location of the electrified fence and perimeter fence.
  - b. Schematics and load calculations indicating and/or displaying the,
    - i. Location of the power source,
    - ii. Materials used for the fence construction,
    - iii. Location of the regulating and monitoring equipment, and
    - iv. Location of emergency access, knox box and cut-off switch.
2. A permit shall be obtained and renewed every two years with a notarized statement attached to the renewal application from an authorized representative of the fence or barrier equipment manufacturer indicating the installation is operating in conformance with the original design and complies with acceptable safety standards.

#### **424.5 Registration Required**

Prior to the installation or use of an electrified fence and upon permit issuance, the permit holder must register the electrified fence with the fire code official to identify the location of said fence and required cut-off switch and knox box in the event that deactivation is required by an authorized public safety official.

#### **424.6 Standards**

##### **424.6.1 Standards - Electrification**

Electric fences or barriers must be designed and certified by an authorized representative of a fence or barrier equipment manufacturer. Upon installation, said representative shall certify the installation meets the following design and safety requirements:

1. AC current shall not be used to energize any electric fence.
2. The energizer for electric fences shall be driven by a commercial storage battery not to exceed 12 volts capacity charged by a solar panel. A commercial trickle charger may augment power source.
3. The electric charge produced by the fence upon contact shall meet the energy output requirements of section 22.108 of the IEC.
4. All ground system cables shall be properly insulated.
5. The controller ground system shall not be connected to any plumbing systems in or out of use and shall be at least 50 feet from other utility and buried water pipes.

6. The fence controller ground wire shall not touch any buildings on site.
7. Fence controller and its ground system shall be at least 50 ft. away from radio and buried telephone wires.
8. An electric fence shall be installed at a minimum clearance from power or telephones lines in accordance with Table BB.1 of the IEC.
9. A lightning diverter (commonly referred to as a lightning arrestor) shall be installed between the fence and the fence controller.
10. A cut-off switch shall be installed capable of disconnecting the fence from the controller in case of emergencies, electrical storms, etc.
11. A knox box shall be installed to provide secure access to the appropriate public safety official to the cut-off switch. The knox box shall be illuminated to a minimum one foot candle.
12. Each energizer shall be connected to its own ground system and must not be connected to any other ground system(s).
13. Two or more energizers shall not be connected to the same fence unless the use of multiple energizers does not increase the overall charge transmitted on the fence and adequate access is provided to the cut-off switch to each energizer.
14. All cabling/wire and connectors shall be of the same material (steel, copper, etc.).
15. All wires shall be separated at minimum clearance in accordance with section 29.101 of the IEC.

#### **424.6.2 Standards-Height**

Electrified fences shall be a minimum of six (6) feet in height and shall not exceed a maximum of ten (10) feet in height.

#### **424.6.3 Standards- Warning Signs**

All electric fences shall have warning signs of reflective material and shall be in accordance with the following requirements:

1. Shall be a minimum of 4 inches by 8 inches in accordance with annex BB of the IEC.
2. All lettering shall be a minimum of one (1) inch high.
3. Shall consist of a yellow background with black inscriptions and kept in good condition to ensure continued visibility.
4. Shall be placed at a maximum of 30 feet distance along the fence with a minimum of two signs for less than a 50 foot length.
5. Signs shall bear the words "Live Wires" or "Electric Fence" in indelible letters in English and Spanish.

#### **424.7 Required Barrier(s)**

1. No electric fence shall be installed or used unless it is completely surrounded by a non-electrical fence or perimeter fence that is not less than six (6) feet in height and no more than eight feet in height in accordance with the provisions of section 20.16.040 of the El Paso Code.
2. The distance between the electrified fence and required perimeter fence shall be a minimum of four inches at its closest point and no further than five feet.

3. A separate permit shall be obtained for the construction of the perimeter fence that shall be constructed prior to the electrified fence installation pursuant to Title 20 of the El Paso City Code.
4. The area between the perimeter wall or fence and the electrified fence shall be kept clear of shrubbery, weeds, trash and debris.

#### **424.8 Hours of activation**

An electrified fence shall only be energized during the hours when the general public does not have legal access to the protected property.

#### **424.9 Fees**

The established fee for a permit to install an electrified fence shall be paid by the applicant at the time of filing an application and upon the renewal of the permit.

#### **424.10. Barbed Wire, Farm/Ranch**

1. Barbed wire fences installed in conventional multi-strand configuration may be used for the same purpose, the same area, and under the same conditions outlined in Section 424.11.
2. Wire shall be securely fastened to durable wooden or metal posts, spaced not to exceed fifteen (15) feet center-to-center, and designed to withstand all loads reasonably expected to be imposed upon them.
3. Gates in such fences shall have solid frames, be conventionally hinged, and shall not swing over public property.

#### **424.11 Barbed Wire Other Than Farm/Ranch**

1. Barbed wire may be used as a topping on walls and fences in areas zoned for commercial and manufacturing uses provided such wire is properly attached and secured to risers or outriggers especially designed for this purpose. Such barbed wire installation shall be placed not less than seven (7) feet above finished grade at any point along the fence, and shall not at any point extend beyond the property line, over the public way, or adjoining property.
2. The use of barbed wire for dwellings or apartments in residential and apartment zones is prohibited.
3. The use, design and minimum height of barbed wire fence topping for occupancies other than dwellings or apartments located in residential or apartment zones, shall be determined by the building official for each such installation. Such determination shall be based on the need for barbed wire protection, considering the probable risk or theft or trespass, the character of the neighborhood, and other pertinent factors; the possible hazards to persons; and reasonable consideration of appearance.

#### **424.12 Use of Broken Glass.**

The use of broken glass and similar materials designed to do bodily harm, as a topping for fences and walls is prohibited.

**Section 2.** Except as herein provided, Title 18 (Building and Construction) shall remain in full force and effect.

**PASSED AND APPROVED** this \_\_\_\_\_ day of \_\_\_\_\_, 2012.

**THE CITY OF EL PASO**

\_\_\_\_\_  
John F. Cook  
Mayor

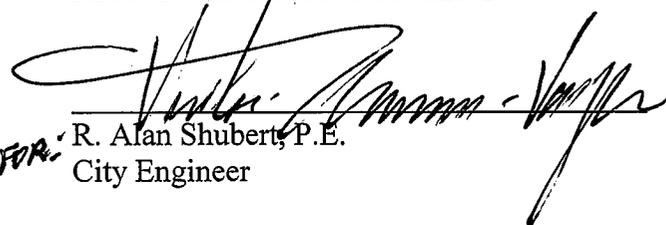
ATTEST:

\_\_\_\_\_  
Richarda Duffy Momsen  
City Clerk

APPROVED AS TO FORM:

  
\_\_\_\_\_  
Cynthia Osborn  
Assistant City Attorney

APPROVED AS TO CONTENT:

  
\_\_\_\_\_  
FOR: R. Alan Shubert, P.E.  
City Engineer

CITY CLERK DEPT.  
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# Electrified Fences

## (Proposed Requirements & Standards)



February 7, 2012



## Legislative Background

- May 18, 2010- City Council considers amending the City Code to allow the use of electric perimeter fencing within city limits
  - *Direction to reject amending the code to allow the use of electric fencing*
- January 20, 2011- Item revisited by the Health, Safety and Community Services Legislative Review Committee (LRC)
  - *Directed staff to research the feasibility of amending the language in the code to permit construction and operation of electric security fences*



## Legislative Background

- December 1, 2011- Proposed ordinance amending the requirements and standards of 18.08.070 brought back to Health, Safety and Community Services LRC
  - *Directed staff to forward the proposed ordinance to the full council and address concerns raised by the LRC*
    - Include key access for law enforcement
    - Explain rationale for the 300ft buffer
    - Present location of each of the eight existing electrical fences



## Intent

- Yield standards/regulations in keeping with El Paso code
  - Preserve Public, Health, Safety and Welfare
- Review of existing International Electrotechnical Commission (IEC) standards (NO. 60335-2-76)
- Benchmark regulations in other Texas Communities
  - Houston
  - San Antonio
  - Fort Worth
  - Tyler
  - Tucson
  - Phoenix
  - Albuquerque

<b>City</b>	<b>Allowed/ Prohibited</b>	<b>Key Requirements</b>
<b>Houston</b>	Allowed	Limited to outdoor storage areas; registration required; perimeter fence and knox box required
<b>San Antonio</b>	Allowed	Outdoor storage areas in industrial zoning; 300 ft buffer; perimeter fence and knox box required; annual permit
<b>Fort Worth</b>	Prohibited	May propose to the Construction Fire Board of Appeals
<b>Tucson</b>	Allowed	Allowed anywhere within city limits; must be approved by listed testing lab and meet electrical standards in 2005 NEC
<b>Phoenix</b>	Allowed	Currently in process of amending; industrial only; perimeter fence required
<b>Albuquerque</b>	Allowed	Allowed in some commercial but not abutting residential



# Overview

- Proposed amendments outline necessary language to regulate installation and operation of electrified fences
- Specify following key information:
  - Restricted uses
  - Permit & registration requirements
  - Standards
    - Electrification
    - Warning Signs
    - Required Barriers
  - Hours of activation
  - Established fee



## Restricted Uses

*Installation restricted to following uses and zoning districts:*

- a. for control of domestic farm animals in areas zoned and actually utilized for farming or ranching activities; or areas where large domestic animals are legally maintained (Only use currently allowed in 18.08.070)
- b. for the permitted uses of outdoor storage, motor vehicle storage, major utility and recycling facilities, general warehouse, contractor yard and manufacturing within the regional commercial district "C-4" except where abutting a residentially zoned property
- c. for installation in industrial and manufacturing districts designated as "Q", "P-1", "M-1", "M-2" and "M-3" as defined by Title 20 of the El Paso City Code



## Restricted Uses

- Only battery-powered units are acceptable
- The installation of an electric fence is prohibited:
  - within 25 feet of any outdoor area used for the handling of hazardous materials pursuant to the Fire Code;
  - within five feet of any public right-of-way;
  - where a project is adjacent to a residential zone and use;
  - within 300 feet of a park, church and/or school facility



# Permit Requirements

- Applications must include the following:
  - Site plan indicating location of electrified fence and perimeter fence
  - Schematics and load calculations indicating and/or displaying:
    - Location of power source
    - Materials used for the fence construction
    - Location of the regulating and monitoring equipment
    - Location of emergency access, knox box and cut-off switch



# Permit & Registration Requirements

- A permit must be obtained and renewed every 2 years
  - A notarized statement from an authorized representative of fence or barrier equipment manufacturer must be attached to renewal permit
- Permit holder must register the electrified fence with the fire code official to identify fence location and required cut-off switch and Knox box
  - Access to authorized public safety official (Police Department and Fire Department) required
  - Necessary for emergency deactivation



## Standards: Electrification

- New section includes the following requirements:
  - AC current shall not be used to energize electric fence
  - Commercial storage battery shall not exceed 12 volts
  - Electrical charge produced shall meet 22.108 of IEC
  - Ground system cables shall be properly insulated
  - Installation of a cut-off switch and knock box required
  - Two or more energizers shall not be connected to the same fence unless multiple chargers do not increase overall charge and provide access to cut-off switch(s)
  - All cabling/wire connectors shall be of the same material
  - All wires shall have minimum clearance per 29.101 of IEC



## Standards: Warning Signs

- All electric fences shall have warning signs of reflective material in accordance with the following:
  - Minimum of 4 inches by eight inches
  - Yellow background with black inscriptions
  - Be placed at a maximum of 30 feet intervals along the fence
    - Minimum of two signs if less than a 50 foot length
  - Bear the words “Live Wires” or “Electric Fence” in English and Spanish
  - Be kept in good condition to ensure continued visibility



## Standards: Required Barrier

- No electric fence shall be installed unless completely surrounded by a non-electrical fence or perimeter fence
  - No less than six feet and no more than eight feet in height
  - Distance between electrified fence and required perimeter fence minimum of four inches and maximum of five feet
  - Of masonry material in accordance with 20.16.040



## Hours of activation

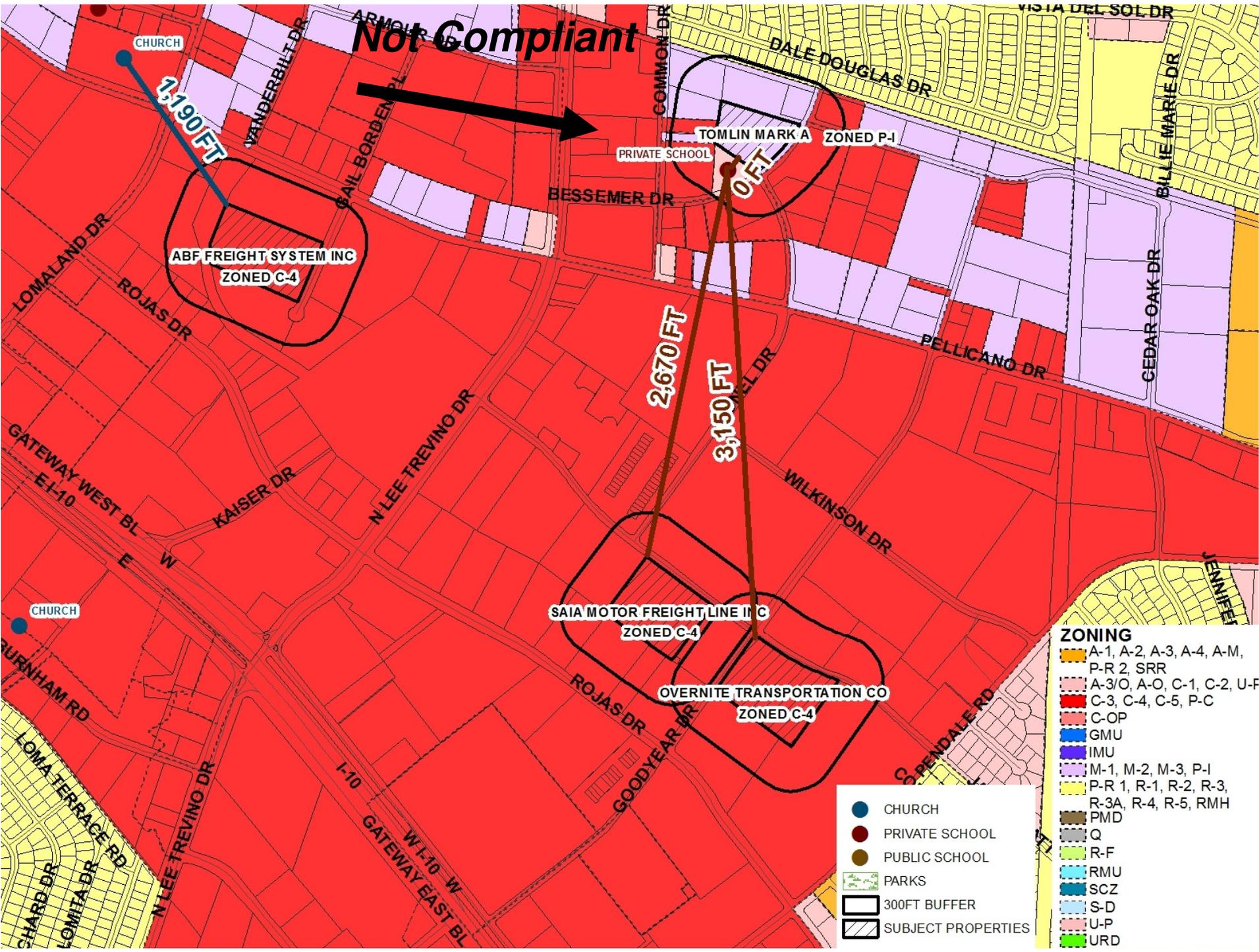
- An electrified fence shall only be energized during hours when the general public does not have legal access to the protected property



## Permit and Renewal Fee

- Initial permit: \$143.00
  - Covers related inspection, plan review and administrative cost
- Renewal permit: \$71.00
  - Inspection only

**Not Compliant**



- CHURCH
- PRIVATE SCHOOL
- PUBLIC SCHOOL
- PARKS
- 300FT BUFFER
- ▨ SUBJECT PROPERTIES

**ZONING**

[Yellow]	A-1, A-2, A-3, A-4, A-M, P-R 2, SRR
[Light Blue]	A-3/O, A-O, C-1, C-2, U-F
[Red]	C-3, C-4, C-5, P-C
[Light Purple]	C-OP
[Blue]	GMU
[Dark Blue]	IMU
[Light Purple]	M-1, M-2, M-3, P-I
[Yellow]	P-R 1, R-1, R-2, R-3, R-3A, R-4, R-5, RMH
[Brown]	PMD
[Grey]	Q
[Light Green]	R-F
[Light Blue]	RMU
[Dark Blue]	SCZ
[Light Blue]	S-D
[Light Purple]	U-P
[Green]	URD

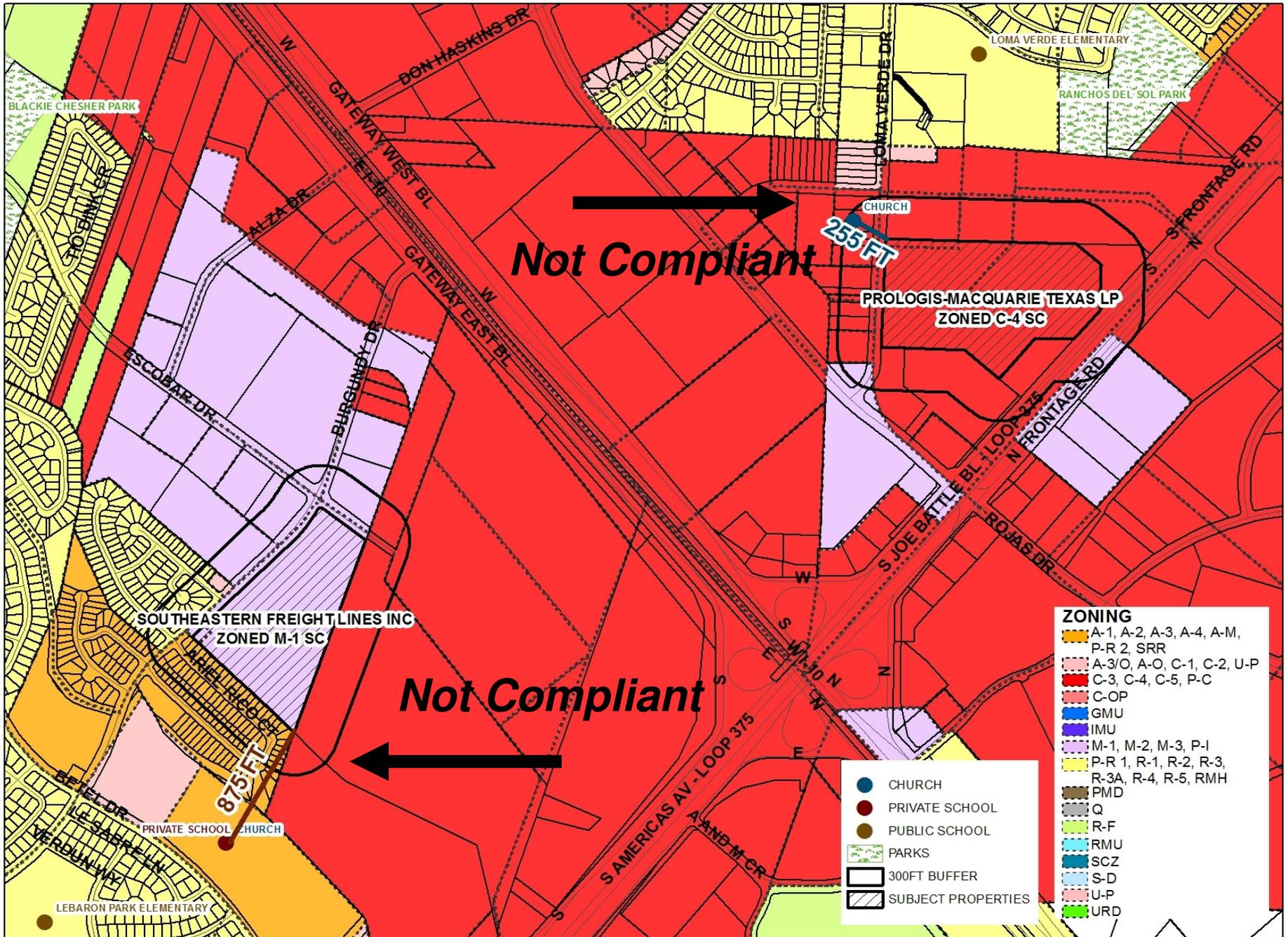


ABF FREIGHT SYSTEM INC  
ZONED C-4

TOMLIN MARK A  
ZONED P-1

SAIA MOTOR FREIGHT LINE INC  
ZONED C-4

OVERNITE TRANSPORTATION CO  
ZONED C-4



**ZONING**

[Yellow]	A-1, A-2, A-3, A-4, A-M, P-R 2, SRR
[Light Blue]	A-3/O, A-O, C-1, C-2, U-P
[Red]	C-3, C-4, C-5, P-C
[Light Purple]	C-OP
[Blue]	GMU
[Purple]	IMU
[Light Green]	M-1, M-2, M-3, P-I
[Yellow-Orange]	P-R 1, R-1, R-2, R-3, R-3A, R-4, R-5, RMH
[Brown]	PMD
[Light Green]	Q
[Light Blue]	R-F
[Light Blue]	RMU
[Light Blue]	SCZ
[Light Blue]	S-D
[Light Blue]	U-P
[Light Green]	URD

- CHURCH
- PRIVATE SCHOOL
- PUBLIC SCHOOL
- PARKS
- 300FT BUFFER
- SUBJECT PROPERTIES



**SOUTHEASTERN FREIGHT LINES INC**  
**ZONED M-1 SC**

**PROLOGIS-MACQUARIE TEXAS LP**  
**ZONED C-4 SC**

ALZA DR

ESCOBAR DR

BURGUNDY DR

W W I-10

E I-10

GATEWAY EAST BL

W

GATEWAY WEST BL

PINE SPRINGS DR

LOMA VERDE DR

PROLOGIS-MACQUARIE TEXAS LP  
ZONED C-4 SC

S FRONTAGE RD

N

N FRONTAGE RD

S

S JOE BATTLE BL - LOOP 375

W

ROJAS DR

R V DR

SEÑOR TEDD WY

ARIEL RICO CT

N AMERICAS AV - LOOP 375

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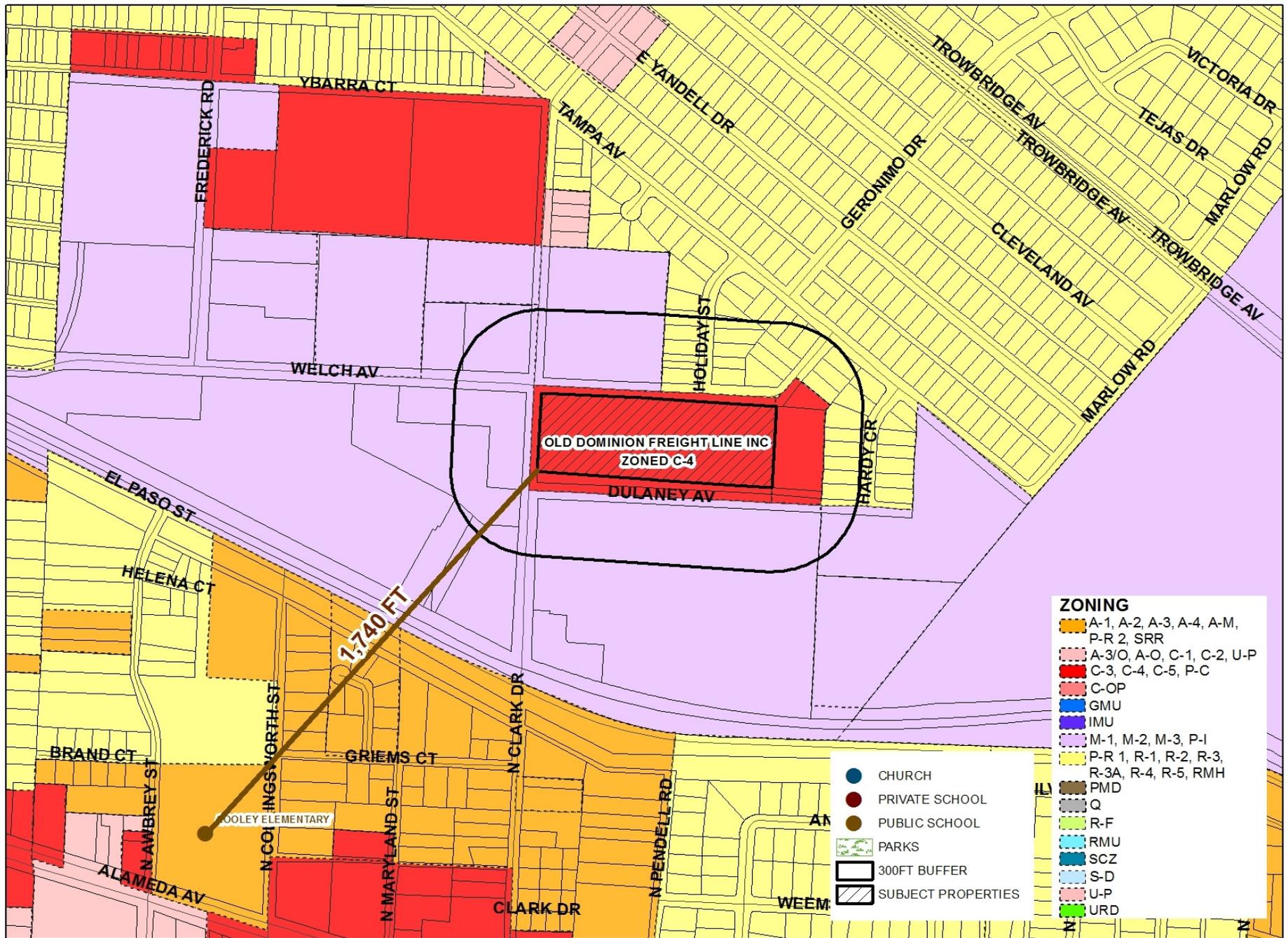
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RD

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**ZONING**

	A-1, A-2, A-3, A-4, A-M, P-R 2, SRR
	A-3/O, A-O, C-1, C-2, U-P
	C-3, C-4, C-5, P-C
	C-OP
	GMU
	IMU
	M-1, M-2, M-3, P-I
	P-R 1, R-1, R-2, R-3, R-3A, R-4, R-5, RMH
	PMD
	Q
	R-F
	RMU
	SCZ
	S-D
	U-P
	URD

	CHURCH
	PRIVATE SCHOOL
	PUBLIC SCHOOL
	PARKS
	300FT BUFFER
	SUBJECT PROPERTIES



WELCH AV

HANLEY CR

GERONIMO DR

CLEVELAND AV

E YANDELL DR

HOLIDAY ST

TAMPA AV

OLD DOMINION FREIGHT LINE INC  
ZONED C-4

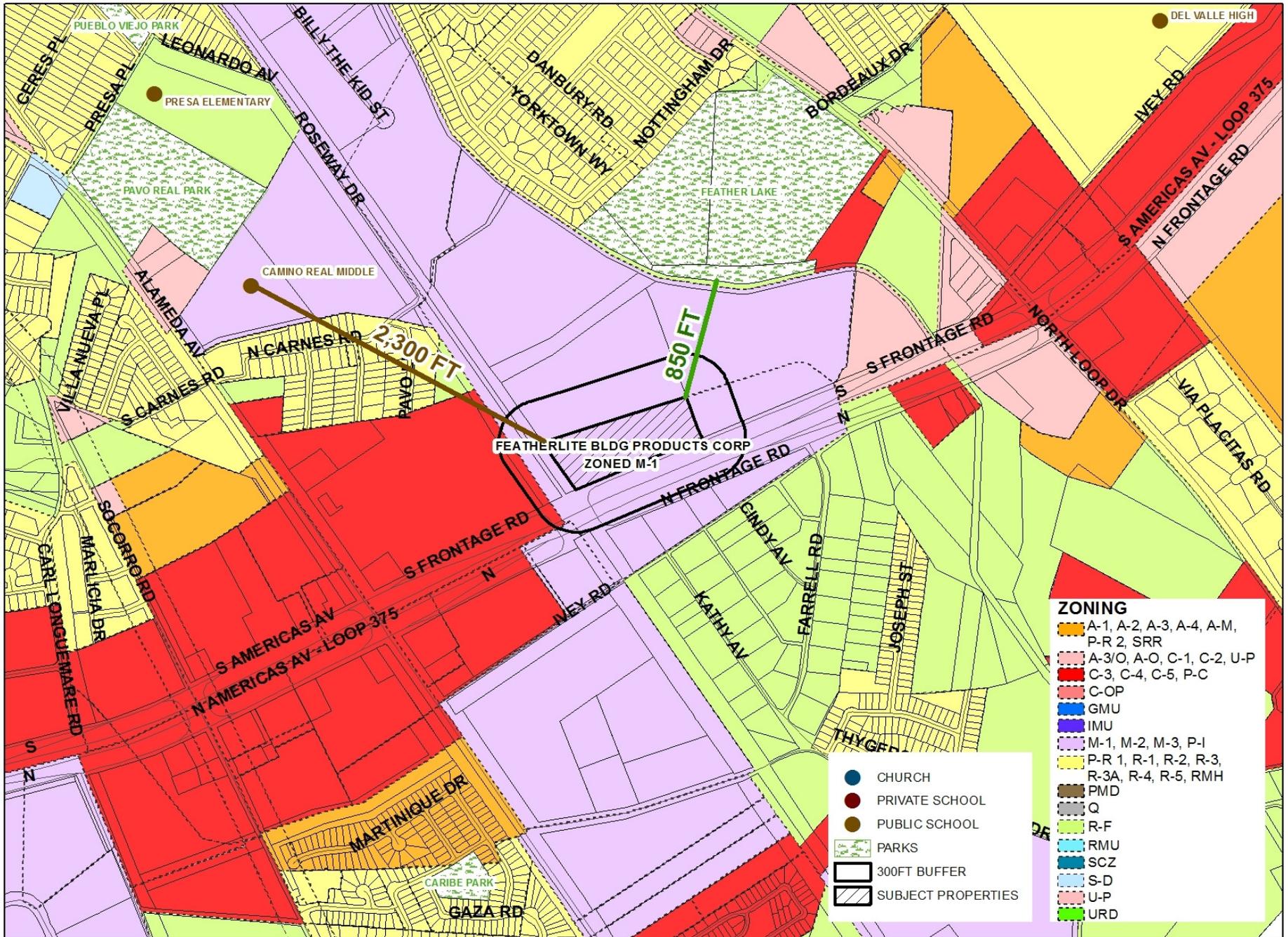
N CLARK DR

HARDY CR

DULANEY AV

N COLLINGSWORTH ST

EL PASO ST







# Comparison of Proposed Amendments

Compliant (5)	Not Compliant (3)
<p><b>ABF Freight</b> <i>1321 Gail Borden Pl</i></p>	<p><b>CEVA Logistics</b> <i>950 Loma Verde Dr.</i> <i>*Within 300ft of a church</i></p>
<p><b>Featherlite Building Products</b> <i>325 Americas Ave</i></p>	<p><b>Southeastern Freight</b> <i>1090 Burgundy Dr.</i> <i>*Abutting residential</i></p>
<p><b>Old Dominion Freight Line</b> <i>300 North Clark Dr.</i></p>	<p><b>Wingfoot Commercial Tire</b> <i>1459 Bessmer Rd.</i> <i>*Within 300ft of a school</i></p>
<p><b>SAIA</b> <i>11420 James Watt Ave.</i></p>	
<p><b>Overnite Transportation Co.</b> <i>1370 Goodyear Dr.</i></p>	



## Staff Recommendations

Department/Official	Position
<b>Engineering</b>	Supportive of proposed amendments
<b>Police</b>	Supportive of proposed amendments
<b>Fire</b>	Supportive of proposed amendments
<b>Building Official</b>	Opposed to amending the code to allow electrified fences
<b>Planning</b>	Opposed to amending the code to allow electrified fences



# *Questions/Comments*