



***Board of County Commissioners***

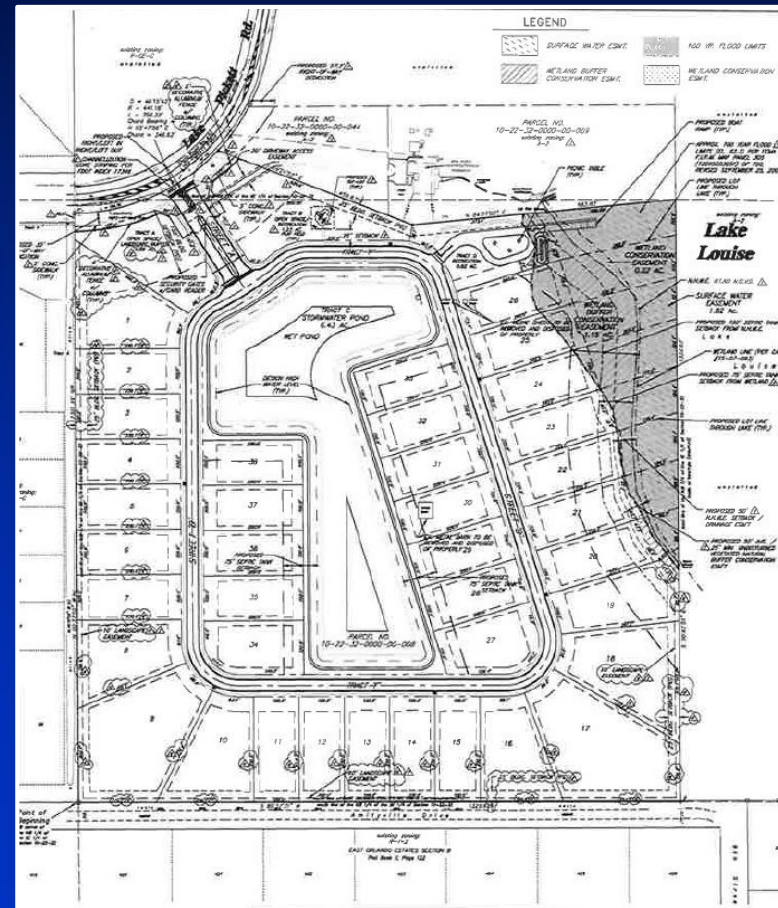
**Heartwood PD / PSP Public Hearing  
and  
Lake Pickett Road Safety Analysis**

**January 9, 2018**



# Purpose

- PSP Public Hearing on December 12, 2017
  - Concerns regarding access and safety along Lake Pickett Road
  - Connectivity to the Bithlo Rural Settlement
  - Conditions of approval





# Presentation Outline

- Request
- Alignment Study
- Crash Analysis
- Other High-Crash Locations
- Potential Safety Enhancements
- Development Conditions
- Requested Action



# Presentation Outline

- Request
- Alignment Study
- Crash Analysis
- Other High-Crash Locations
- Potential Safety Enhancements
- Development Conditions
- Requested Action





# Heartwood PD / Heartwood Preliminary Subdivision Plan (PSP)

<b>Case:</b>	PSP-17-01-012
<b>Project Name:</b>	Heartwood PD / Heartwood PSP
<b>Applicant:</b>	James H. McNeil, Jr., Akerman, LLP
<b>District:</b>	5
<b>Acreage:</b>	40.62 gross acres
<b>Location:</b>	South of Lake Pickett Road / West of Lake Louise
<b>Request:</b>	<p>To subdivide 40.62 gross acres in order to construct a gated thirty-eight (38) single-family residential dwelling unit subdivision.</p> <p>Additionally, one (1) waiver from Orange County Code Section 34-209 is being requested to allow a six (6) foot high simulated aluminum / wrought iron fence with columns in lieu of a six (6) foot masonry wall on Tracts A and B along Lake Pickett Road.</p>



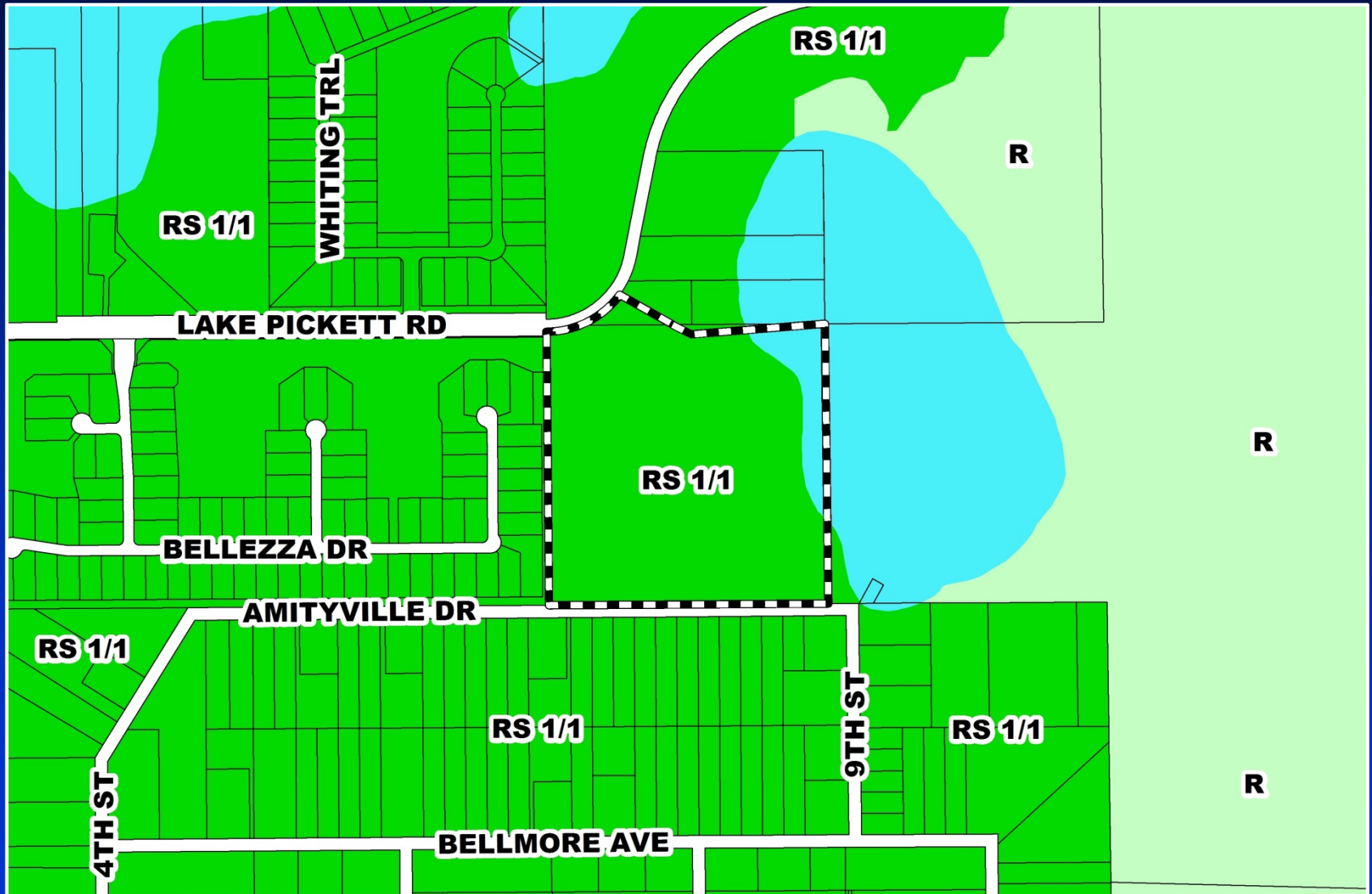
# Heartwood PD / Heartwood Preliminary Subdivision Plan (PSP) Aerial Map





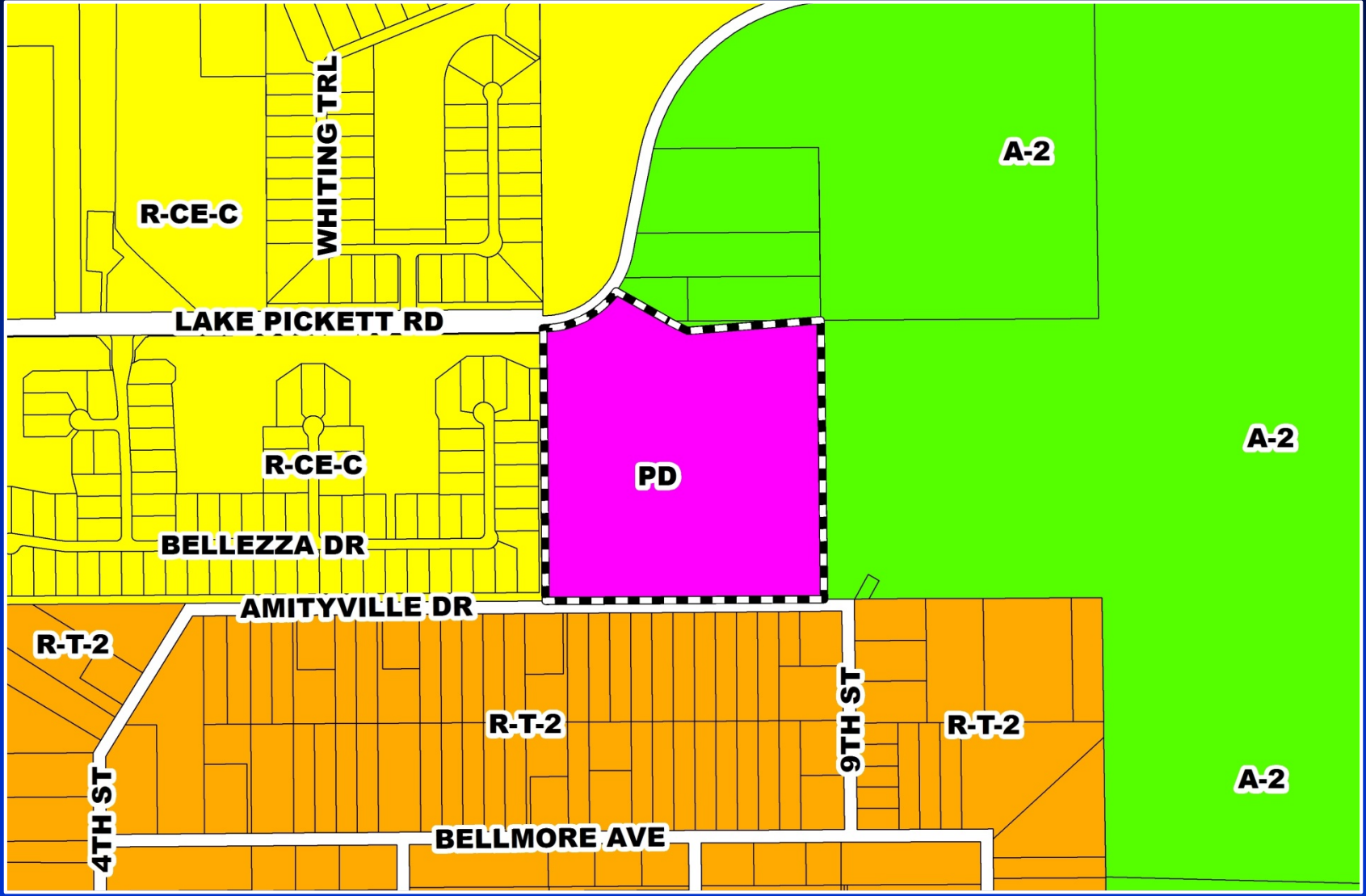


# Heartwood PD / Heartwood Preliminary Subdivision Plan (PSP) Future Land Use Map





# Heartwood PD / Heartwood Preliminary Subdivision Plan (PSP) Zoning Map







# Presentation Outline

- Request
- **Alignment Study**
- Crash Analysis
- Other High-Crash Locations
- Potential Safety Enhancements
- Development Conditions
- Requested Action

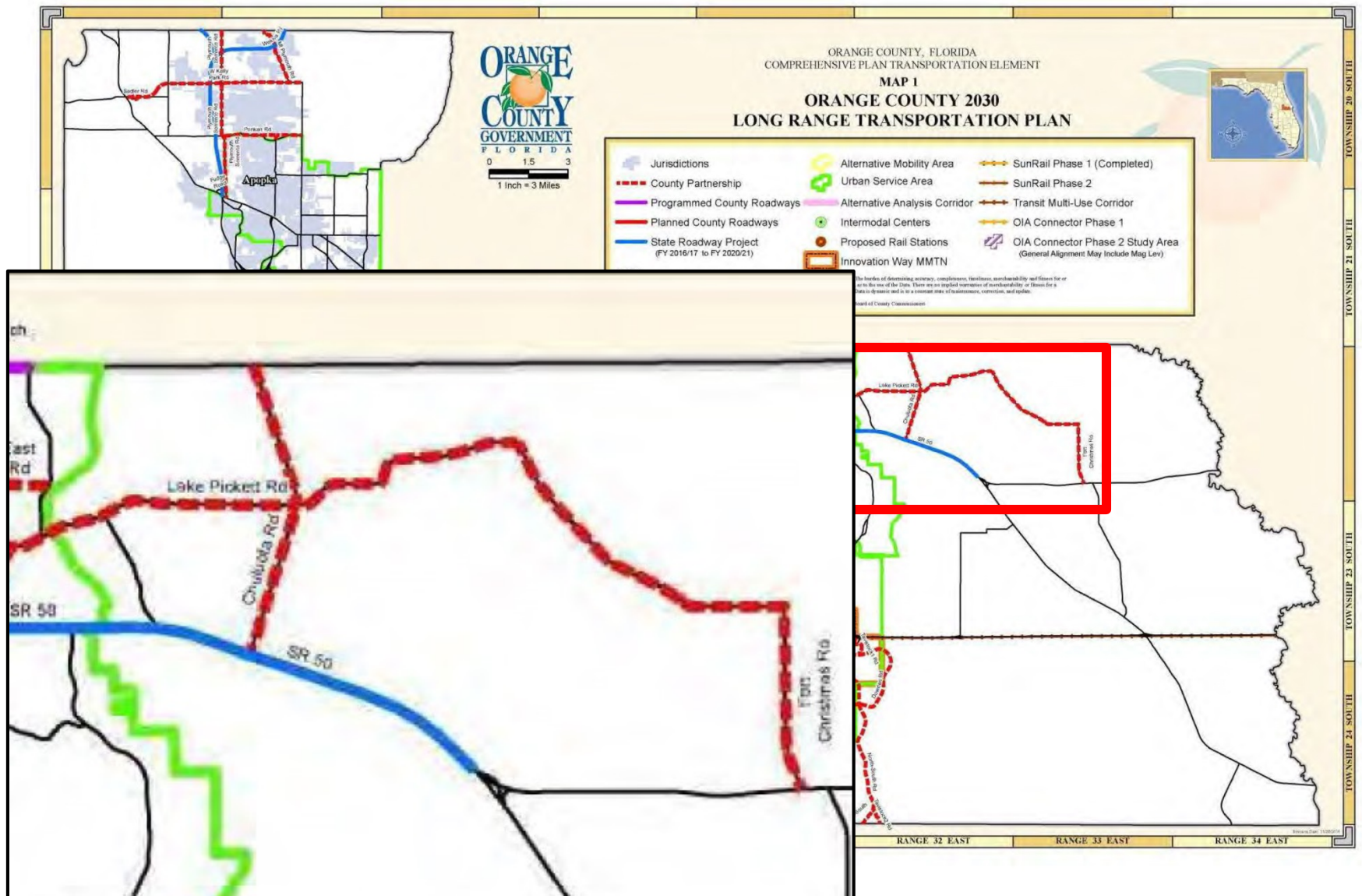


- **Lake Pickett Road improvements have been in LRTP since 2003**
- **Funding not included in current CIP**





# Map 1 Transportation Element Orange County 2030 Long Range Plan





# Alignment Study

- Comprehensive plan provides authority to negotiate public-private partnership road studies, design, R/W dedication, and construction (Road Agreement Committee)
- R/W needs determined administratively and through studies (RCA & small scale)



**ORANGE COUNTY  
FLORIDA**

**COMPREHENSIVE PLAN  
2010 - 2030**  
GOALS, OBJECTIVES & POLICIES

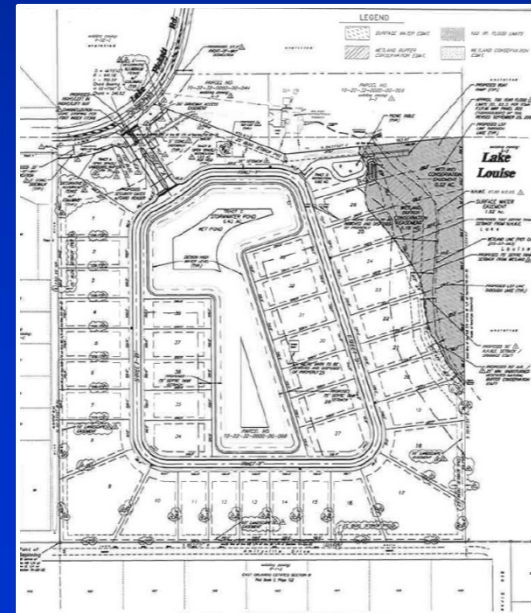
ADOPTED: MAY 19, 2009  
AMENDED: August 1, 2017,  
THROUGH ORDINANCE 2017-15  
EFFECTIVE: September 1, 2017

PREPARED BY:  
ORANGE COUNTY COMMUNITY, ENVIRONMENTAL  
AND DEVELOPMENT SERVICES DEPARTMENT  
ORANGE COUNTY PLANNING DIVISION



# Alignment Study

- **Development linkage**
  - Future road R/W needs identified by Public Works Engineering division and Transportation Planning division in permitting system
  - R/W requests made at Zoning, PD, PSP and DP stages
  - Impact fee credits, vehicle trips and vesting provided in exchange for R/W conveyance or road production phases





# Alignment Study

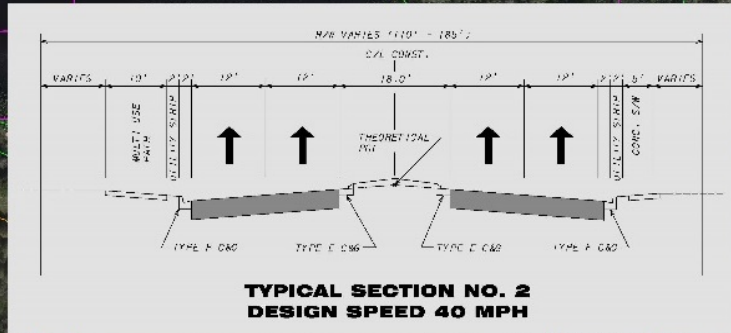
- Lake Pickett Road Alignment Study initiated because of pending applications for Lake Pickett Cluster PSP and Heartwood PD

**1-17-2017**      **Road Alignment Purchase Order  
Task Authorization (Pegasus  
Engineering LLC)**

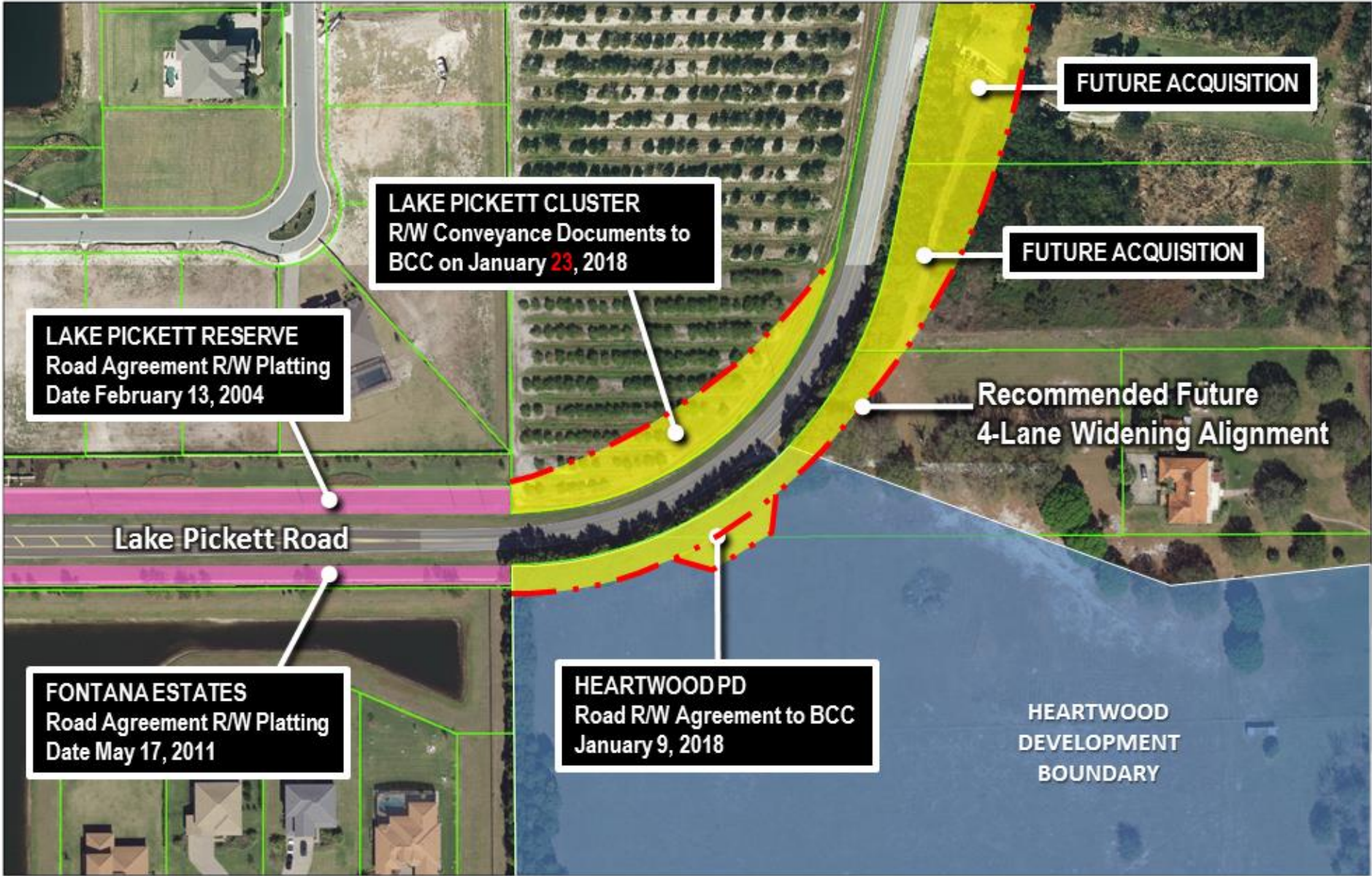
**5-15-2017**      **Alignment Study Complete**



PARCEL ID	AREA (SF)	AREA (AC)
10-22-32-0000-00-008	6008	0.1379
10-22-32-0000-00-044	10,581	0.2429
10-22-32-0000-00-015	17,623	0.4046
10-22-32-0000-00-012	42,736	0.9811
10-22-32-0000-00-007	152,891	3.5099
10-22-32-0000-00-003	20,687	0.4749









# Presentation Outline

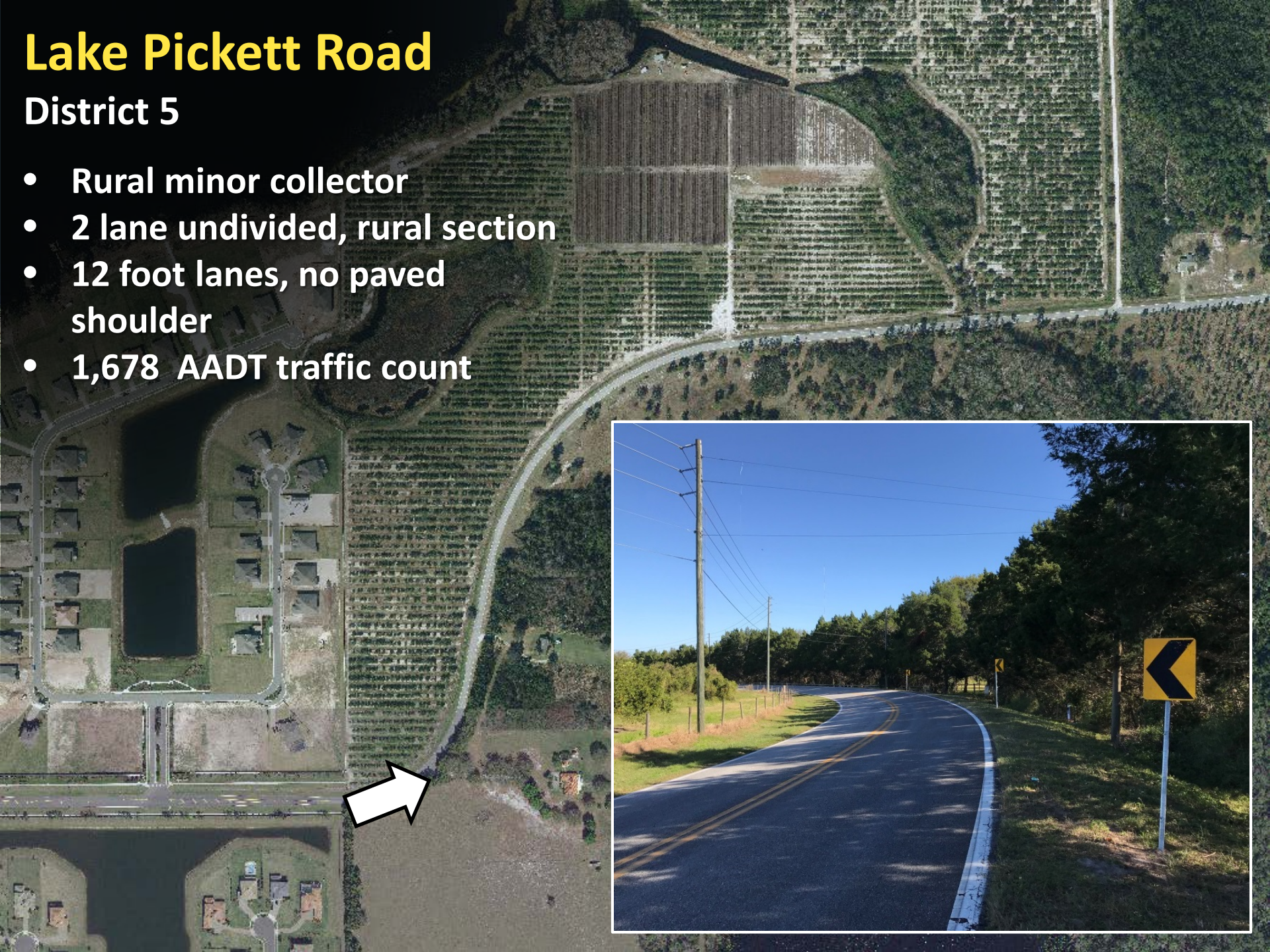
- Request
- Alignment Study
- **Crash Analysis**
- Other High-Crash Locations
- Potential Safety Enhancements
- Development Conditions
- Requested Action



# Lake Pickett Road

## District 5

- Rural minor collector
- 2 lane undivided, rural section
- 12 foot lanes, no paved shoulder
- 1,678 AADT traffic count

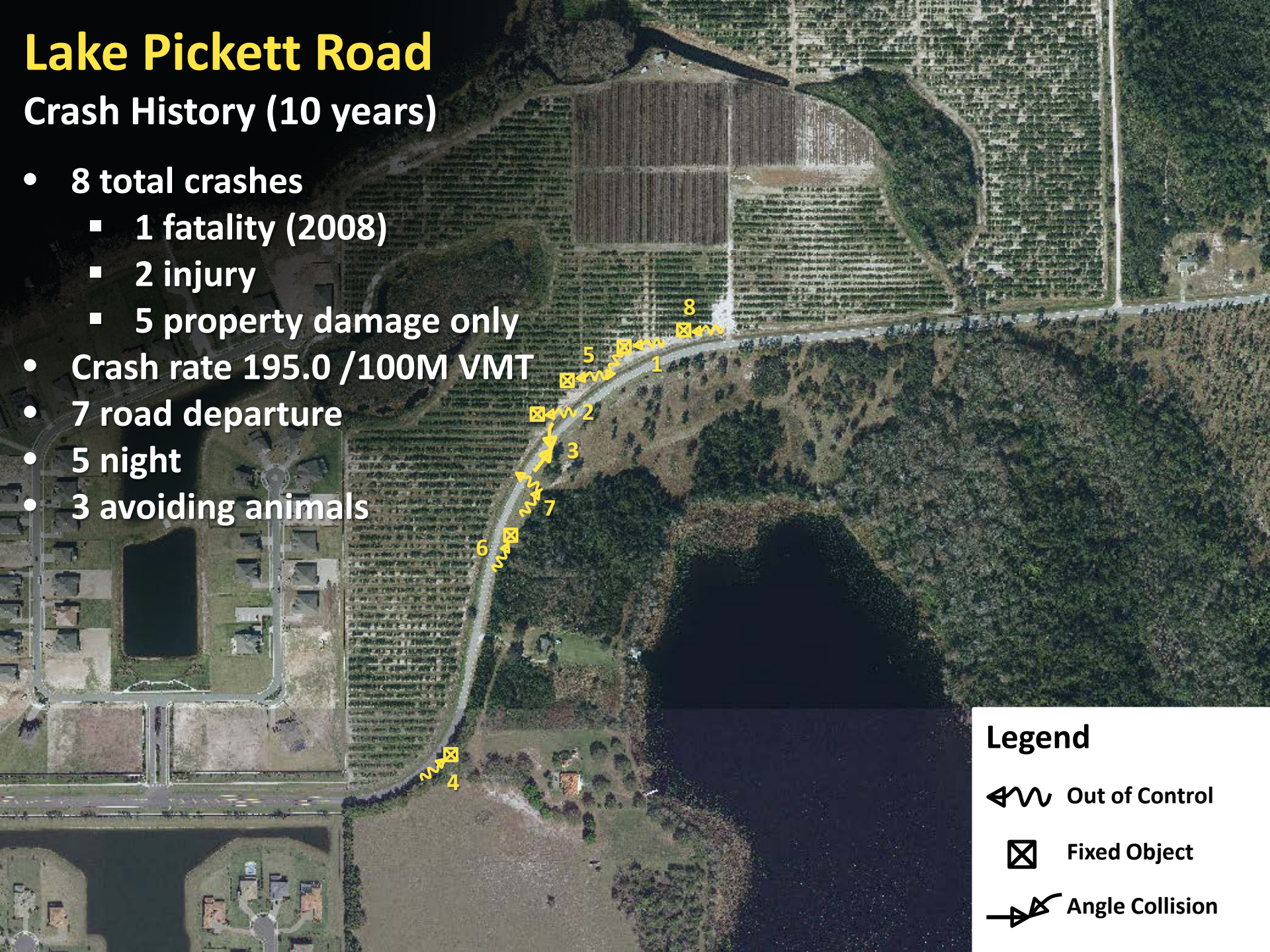




# Lake Pickett Road

## Crash History (10 years)

- 8 total crashes
  - 1 fatality (2008)
  - 2 injury
  - 5 property damage only
- Crash rate 195.0 /100M VMT
- 7 road departure
- 5 night
- 3 avoiding animals



### Legend

⚡ Out of Control

☒ Fixed Object

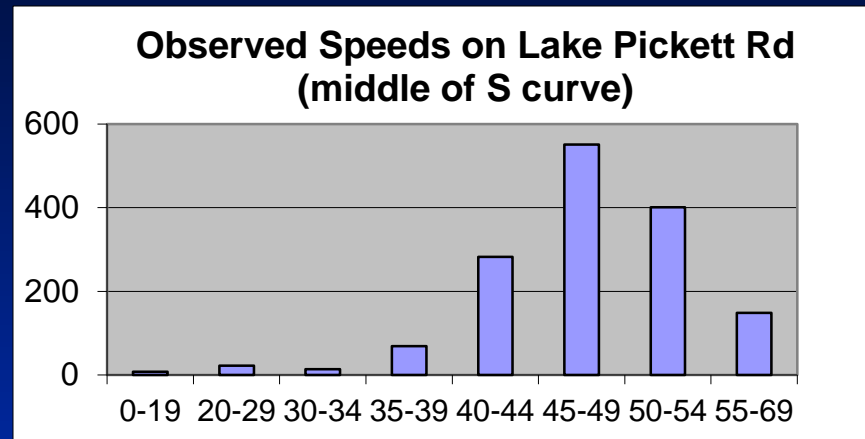
➡ Angle Collision





# Prevailing Speeds

- Posted speed 45 mph
- 35 mph advisory speed thru curves
- West of Curves
  - 85th percentile speed 57.8 mph
  - Median speed 50.1 mph
- Between Curves
  - 85th percentile speed 54.6 mph
  - Median speed 48.58 mph





# Presentation Outline

- Request
- Alignment Study
- Crash Analysis
- **Other High-Crash Locations**
- Potential Safety Enhancements
- Development Conditions
- Requested Action



# Avalon Road

## District 1

Curve Length	0.27 miles
Daily Volume	6,800 AADT
Crash History	23 / 10 years
Crash Rate	343.5 per 100M VMT





# Reams Road

District 1

Curve Length	0.32 miles
Daily Volume	15,900 AADT
Crash History	41 / 10 years
Crash Rate	221.1 per 100M VMT





# Binion Road

District 2

Curve Length	0.57 miles
Daily Volume	3,850 AADT
Crash History	15 / 10 years
Crash Rate	187.3 per 100M VMT





# Fort Christmas Road

District 5

Before recent Safety Improvement

Curve Length	0.26 miles
Daily Volume	1,250 AADT
Crash History	14 / 10 years
Crash Rate	1183.0 per 100M VMT





# Fort Christmas Road

District 5

After recent Safety Improvement







# Rural Curve Crash Rates

Roadway	Limits	Crash Rate
Ft. Christmas Road	Curve at Wheeler Road Intersection	1183.0*
Avalon Road	Curve north of Davenport Road	343.5
Reams Road	"S" curve at Ficquette Road	221.1
Lake Pickett Road	"S" curve	195.0
Binion Road	Curve south of Harmon Road	187.3
Ponkan Road	Curve at Pittman Road	182.6
Tilden Road	Curve at West Orange Country Club	154.6
West Christmas Road	"S" curve	126.3
Lake Mary Jane Road	Curve at Grey Birch Circle	71.8

*\* Crash rate prior to recent safety improvements*



# Presentation Outline

- Request
- Alignment Study
- Crash Analysis
- Other High-Crash Locations
- **Potential Safety Enhancements**
- Development Conditions
- Requested Action



# Potential Safety Enhancements

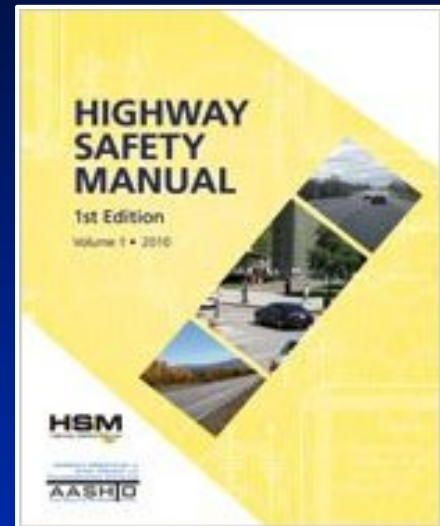
- **2010 Christmas / Bithlo Road Safety Small Area Study**
- **Existing treatments:**
  - Double yellow centerline with reflective pavement markers (rpms)
  - White edge lines
  - Curve warning sign with advisory speed
  - Chevron signs around south curve
- **Actions taken:**
  - Added chevron signs around north curve





# Potential Safety Enhancements

- Given Lake Pickett Road geometric characteristics and crash history, a number of safety enhancements are feasible
- AASTO Highway Safety Manual and CMF Clearinghouse
  - Evaluate benefits of implemented treatments
  - Integrate safety elements in a cost-effective manner





# Potential Safety Enhancements

- Speed feedback signs
- Friction course
- Edgeline rumble striping
- Centerline rumble striping
- Roadway lighting
- 4' paved shoulder







# Potential Safety Enhancements

## Lake Pickett Road “S” Curve

	Potential Crash Reduction	Cost
Speed feedback signs (2)	46%	\$17,000
Friction course	32%	\$75,000
Edgeline rumble striping	15%	\$4,500 project limits
Centerline rumble striping	17%	\$5,500 project limits
Roadway lighting	20%	\$10,000 for 4 poles
4' paved shoulder	21%	\$140,000
<i>Total possible reduction</i>	<i>~25-50%</i>	



# Potential Safety Enhancements

- **County Resurfacing Project**
  - Limits from SR 50 to Ft. Christmas Rd
  - Scheduled for FY 18
  - Can include several safety enhancements
    - 4' Shoulders
    - Rumble striping
  - Will be coordinated with proposed developer improvements
    - Segment east of Chuluota Road delayed until FY 19





# Presentation Outline

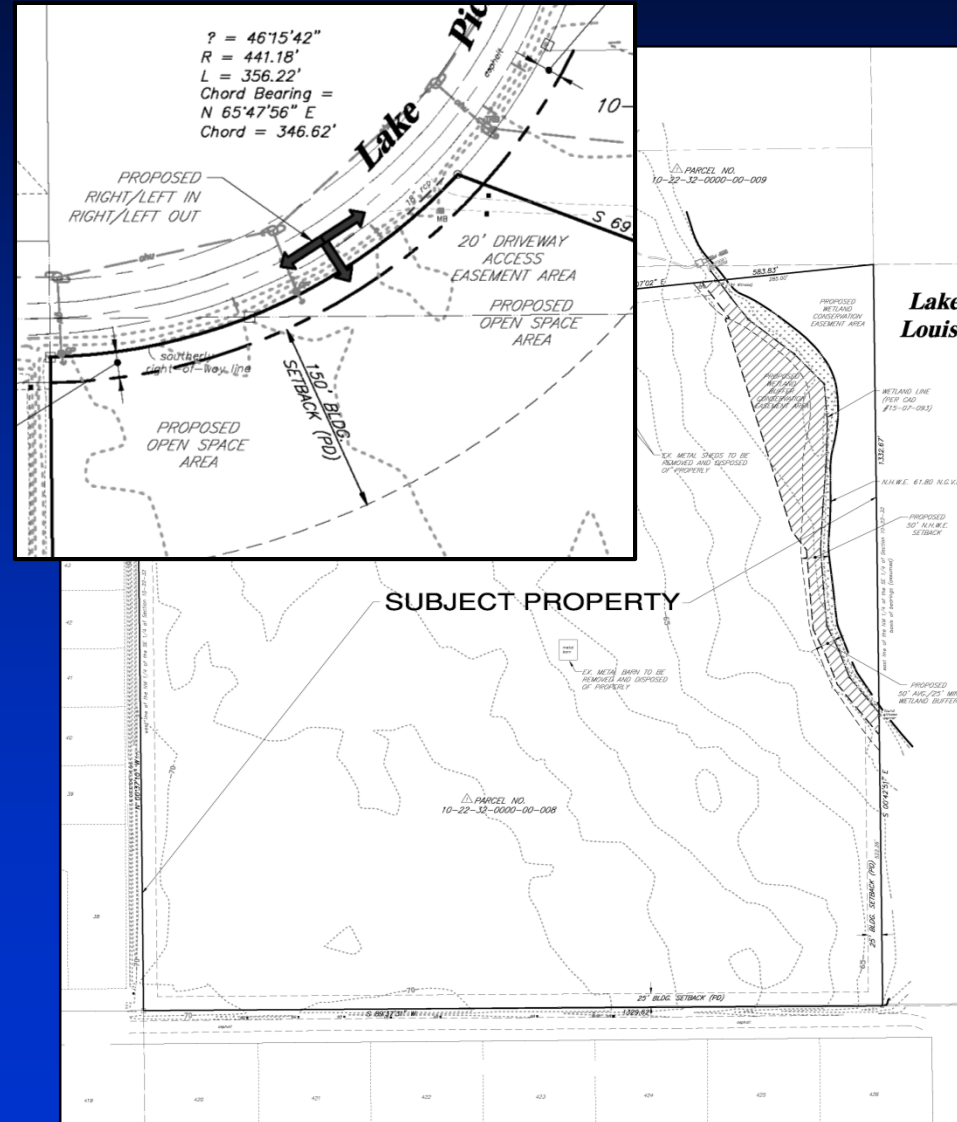
- Request
- Alignment Study
- Crash Analysis
- Other High-Crash Locations
- Potential Safety Enhancements
- **Development Conditions**
- Requested Action





# Access to Bithlo Rural Settlement

- PD Public Hearing on December 13, 2016
  - Comments from Com. Bonilla regarding connection to Bithlo rural settlement
  - Staff committed to review the connection as part of the PSP
  - No condition of approval was added





# Approved Access Locations

Lake Picket Cluster PSP  
Approved August 22, 2017



Lake Pickett Reserve  
PSP  
Approved May 1, 2007



Fontana Estates PSP  
Approved  
August 8, 2006



Heartwood PSP  
Public Hearing  
January 9, 2018





# Access to Bithlo Rural Settlement

- **Comp Plan policy analysis regarding connectivity and gating (Future Land Use Element)**
- OBJ FLU6.2 states that Rural Settlements provide for a rural residential lifestyle, allow a transition of rural areas adjacent to the Urban Service Area, and were intended to recognize and **preserve existing development patterns** at the time the CP was adopted in 1991.
- FLU6.2.14 The future land use, density and intensity of development adjacent to a Rural Settlement shall not negatively impact the character of the Rural Settlement. Density on adjacent parcels shall be reviewed in the context of its compatibility with the Rural Settlement. Additional compatibility may be provided using buffering or the clustering of units with dedicated open space, consistent with Future Land Use FLU6.2.6. **Adjacent development shall be designed to produce minimal impact on local roads within the Rural Settlement.**





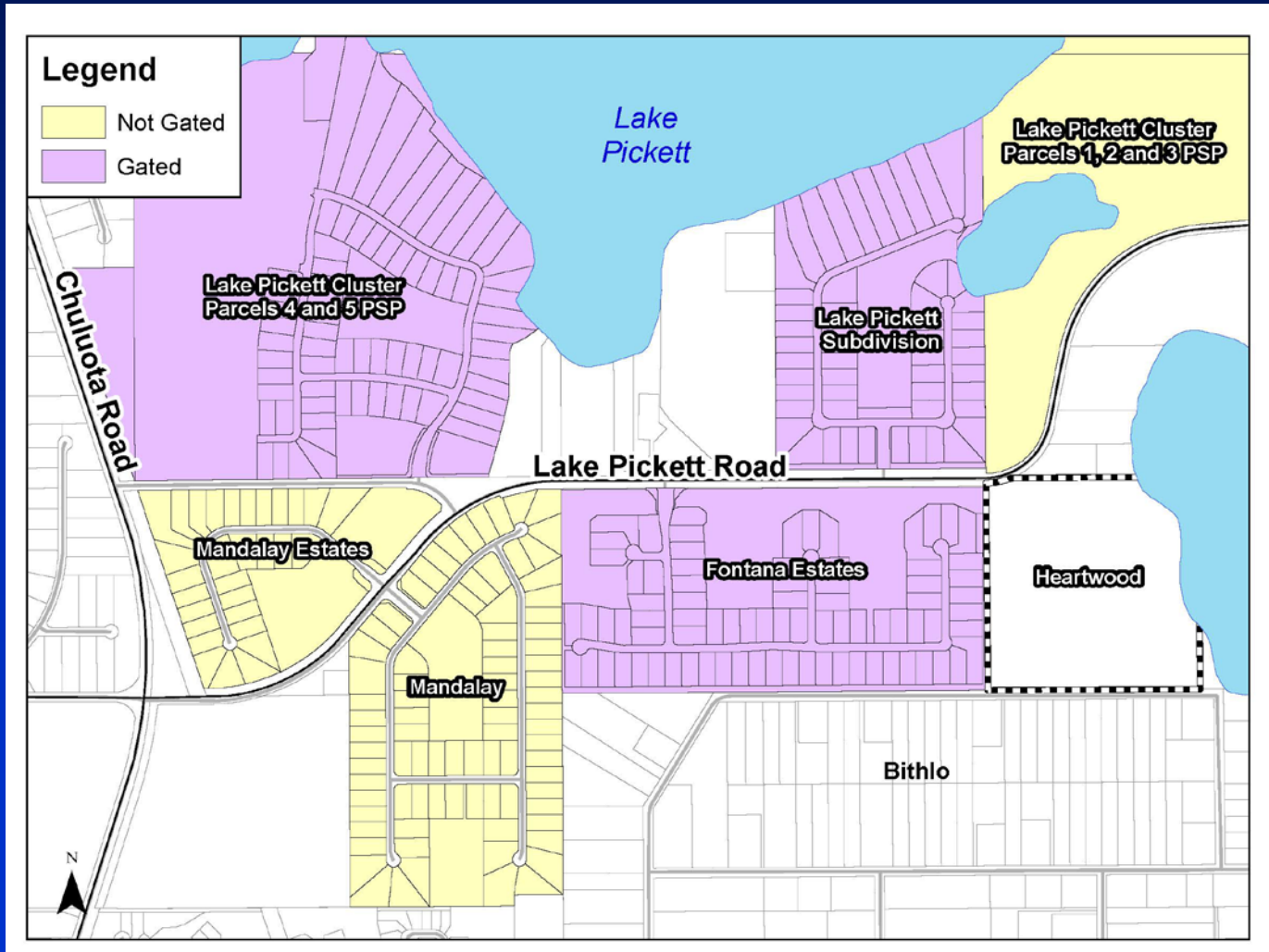
# Access to Bithlo Rural Settlement

- **Comp Plan policy analysis regarding connectivity and gating (Transportation Element)**
- T3.1.5 Proposed gated communities and private streets will be **evaluated on a case-by-case basis** for appropriateness.
- T3.2.1 The County shall **require developments to provide interconnected transportation street, pedestrian, and bicycle networks** through measures including, but not limited to, crossaccess easements, public rights-of-way, and/or transportation facility stubouts to adjacent parcels. These connections shall be provided in all directions, except where not physically feasible or the abutting land is undevelopable, including across existing and proposed streets, at intervals that support direct pedestrian and bicycle travel within and beyond the borders of the proposed development and that avoid cul-de-sacs or other closed-end street designs.



# Access to Bithlo Rural Settlement

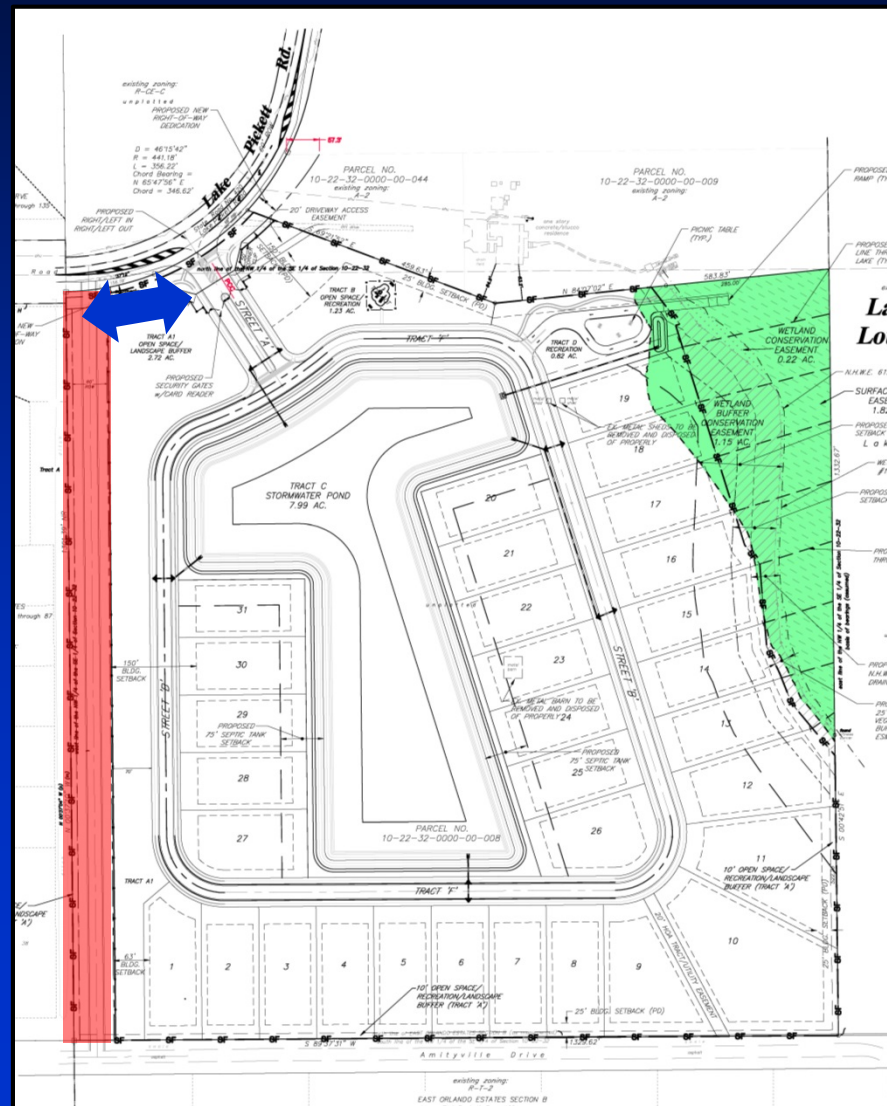
## Gated subdivisions along Lake Pickett Road





# Access to Bithlo Rural Settlement

- Alternative site plan
  - Provides 60' ROW on Western boundary
  - Loss of 7 lots
    - Lost acreage
    - ½ acre min
    - required setbacks from Lake Pickett Road
  - Introduces safety issues with 2 driveway connections within ~100'







# Conditions of Approval

- **21 Conditions of Approval listed in staff report**
  - Condition #8 is regarding the gate
  - If the project is not gated, the following conditions would have to be added:
    - A Municipal Service Benefit Unit (MSBU) shall be established for the standard operation and maintenance of street lighting inventory including leasing, fuel, and energy costs for this project. Street lighting fixtures, poles, and luminaries used in this project shall be selected from the approved inventory list supplied by the Orange County Comptroller. Street lighting fixtures, poles, and luminaries used in this project shall be supplied and installed by the utility company that services the area of the project, as authorized by law or agreement, and thereafter maintains the street lighting inventory. The developer shall obtain approval of the street lighting fixtures, poles, and luminaries from the Orange County Comptroller Special Assessments Department via a "Letter of Commitment" prior to the installation of the street lighting fixtures, poles, and luminaries and prior to the plat being recorded by Orange County Comptroller Official Records section. All installation costs and street lighting operational costs prior to the effective date of the MSBU approval by the Orange County Board of County Commissioners shall be the sole responsibility of the developer.
    - Roads and drainage system(s), including any retention pond(s), will be owned and maintained by Orange County with a Municipal Service Benefit Unit (MSBU) established for stormwater system functionality. Routine maintenance, including mowing, beyond that provided by the County, shall be the responsibility of the Homeowners' Association.
  - Condition 21 is the waiver for the fence along Lake Pickett Road



# D5 Requested Conditions

- **Gating and connectivity**
- **Compatibility**
- **Traffic Safety**
- **Miscellaneous**



# Additional Conditions of Approval

22. Applicant shall provide a twenty foot (20') wide HOA tract between Lots 16 and 17 as shown on the PSP which shall be owned and maintained by the HOA. There shall be a twenty foot (20') wide utility easement over the twenty foot (20') wide HOA tract.
23. Applicant shall provide a twenty foot (20') wide easement for landscape/wall within the rear of lots 9-17 as shown on the PSP.
24. Subdivision lighting will be consistent with Orange County lighting requirements and shall contain full cutoff fixtures.
25. The covenants and restrictions for this subdivision shall include an acknowledgement that a Lake Louise MSTU/BU may be proposed at sometime within the future. Participation within such an MSTU/BU shall be subject to the County's rules and procedures for establishing Lake MSTU/BU's.





# **Additional Conditions of Approval**

- 26. Applicant will construct a westbound left turn lane on Lake Pickett Road at the entrance to the subdivision.**
- 27. Applicant shall install solar powered “Electronic Speed Feedback Sign” assemblies with curve warning signs on Lake Pickett Road approaching the curves, one on the eastbound approach adjacent to the project access and one on the westbound approach to the north curve. This installation requirement shall be subject to the approval of the Orange County Traffic Engineer.**
- 28. Milling and resurfacing of the existing roadway through the project limits will be required as determined through the County permitting process. Friction course (FC 9.5) is required to be applied to the resurfaced roadway, newly constructed westbound left turn lane, and associated transitions through the south curve adjacent to the project access.**



# **Additional Conditions of Approval**

- 29. Applicant will construct 4-foot paved shoulders on both sides of the roadway on approach to the south curve and departing the south curve. The shoulder will commence no less than 100 feet prior to the point of curvature of the south curve and terminate no less than 100 feet past point of tangent after the curve.**
- 30. Applicant will install profiled thermoplastic pavement markings (rumble striping) for both edgelines and centerlines within the limits of resurfacing. Centerline striping will include reflective pavement markings (rpms).**
- 31. Applicant will install four (4) light poles with roadway lighting at the project entrance intersection (within the County's ROW). The entrance roadway lighting shall be included in the HOA's lighting maintenance contract with the utility company.**





# Presentation Outline

- Request
- Alignment Study
- Crash Analysis
- Other High-Crash Locations
- Potential Safety Enhancements
- Development Conditions
- **Requested Action**



## Action Requested

- Make a finding of consistency with the Comprehensive Plan (CP) and approve the Heartwood Planned Development (PD) / Heartwood Preliminary Subdivision Plan (PSP) dated “Received September 7, 2017”, subject to the conditions listed under the DRC Recommendation in the Staff Report.

– AND –

- Approve Consent Item E.3

District 5