



**Loudoun County**

**VIRGINIA**

WHERE TRADITION MEETS INNOVATION

# Intersection Improvement Program Overview

Transportation and Land Use Committee Meeting  
February 19, 2020

# Background

- Initial study
  - Completed in February 2017
  - Studied 523 unsignalized intersections
  - Identified 29 as Critical Intersections
- FY 2019
  - Board of Supervisors approved Intersection Improvement Program



# Program Overview

- Purpose:
  - Systematically improve intersections on Arterial and Collector roads within Loudoun County
- Intent:
  - Construct 5 signals and 1 roundabout each year
- Implementation:
  - Required determining intersection rank-order to maximize safety improvements
  - Required at least 3 years to ramp-up implementation
  - Funding allocated to Route 50 / Trailhead Drive roundabout

# Prioritization Study

- Of 29 Critical Intersections:
  - 8 intersections already completed or currently underway
  - 1 intersection deferred to FY 2020
  - 20 remaining



# Roadway Intersection Improvement Prioritization Study

- Visited the site and analyzed crash history
- Conducted traffic signal warrant analyses
- Evaluated innovative alternatives
- Prioritized intersection improvements based on: Safety, Traffic Impacts, Signal Warrants, Pedestrian / Bicycle Impacts and Roadway Impacts



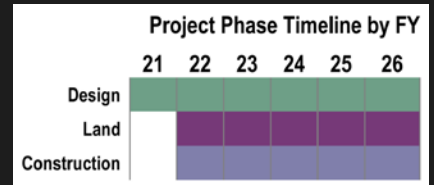
# Roadway Intersection Improvement Prioritization Study

- In April 18, 2019 meeting Board directs staff to:
  - Submit recommended intersection improvements to VDOT for approval
  - Brief respective District Supervisors on analysis findings and approved intersection improvement recommendations.
- Results:
  - VDOT approval obtained for 13 intersections, 2 approvals deferred, 5 intersections outstanding

# CIP Funding Status & Implementation

- This program provides funding to initiate improvements for a minimum of one and a maximum of six intersection improvements each year based on the size and scope of the needed improvement (typically five signals, one roundabout).
- Traffic signals typically require one year for design and one year for land acquisition, with construction starting in year three.
- Roundabouts typically require two years for design, one year for land acquisition, and two years for construction. Project development times vary by project location.

# CIP Funding Status & Implementation



Adopted  
FY19-FY24  
CIP

| Capital (\$ in 1000s)       | Prior  |              |         |         |               |               |               | 6 Year        | Future        | Project        |
|-----------------------------|--------|--------------|---------|---------|---------------|---------------|---------------|---------------|---------------|----------------|
|                             | Alloc. | FY 2019      | FY 2020 | FY 2021 | FY 2022       | FY 2023       | FY 2024       | Total         | FYs           | Total          |
| Professional Services       | -      | 1,854        | -       | -       | 2,700         | 1,900         | 1,900         | 8,354         | 7,600         | 15,954         |
| Land                        | -      | -            | -       | -       | 2,500         | 2,500         | 2,600         | 7,600         | 10,400        | 18,000         |
| Construction                | -      | -            | -       | -       | 8,765         | 10,890        | 11,335        | 30,990        | 38,940        | 69,930         |
| Furniture, Fixtures & Equip | -      | -            | -       | -       | -             | -             | -             | -             | -             | -              |
| Other                       | -      | -            | -       | -       | -             | -             | -             | -             | -             | -              |
| <b>Total Cost</b>           | -      | <b>1,854</b> | -       | -       | <b>13,965</b> | <b>15,290</b> | <b>15,835</b> | <b>46,944</b> | <b>56,940</b> | <b>103,884</b> |

Proposed  
FY21-FY26  
CIP

| Capital (\$ in 1000s) | Prior        |         |               |               |               |               |               | 6 Year        | Future        | Project        |
|-----------------------|--------------|---------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
|                       | Years        | FY 2021 | FY 2022       | FY 2023       | FY 2024       | FY 2025       | FY 2026       | Total         | FYs           | Total          |
| Professional Services | 1,854        | -       | 2,700         | 1,900         | 1,900         | 1,900         | 1,900         | 10,300        | 7,800         | 19,954         |
| Land                  | -            | -       | 2,500         | 2,500         | 2,600         | 2,600         | 2,600         | 12,800        | 10,600        | 23,400         |
| Construction          | -            | -       | 8,765         | 10,890        | 11,335        | 9,735         | 9,735         | 50,460        | 38,940        | 89,400         |
| <b>Total Cost</b>     | <b>1,854</b> | -       | <b>13,965</b> | <b>15,290</b> | <b>15,835</b> | <b>14,235</b> | <b>14,235</b> | <b>73,560</b> | <b>57,340</b> | <b>132,754</b> |



# Next Steps

- Brief respective District Supervisors on analysis findings and approved intersection improvement recommendations.
- Determine level of public engagement
- Prioritize intersections for advancing to design and construction
- Repeat countywide intersection analysis considering:
  - New CTP roads
  - Signalized Intersections
  - Updated Traffic Volumes and Crash Information

Questions?