

Henlopen TID

Transportation Improvement District

Presented to
Sussex County Council

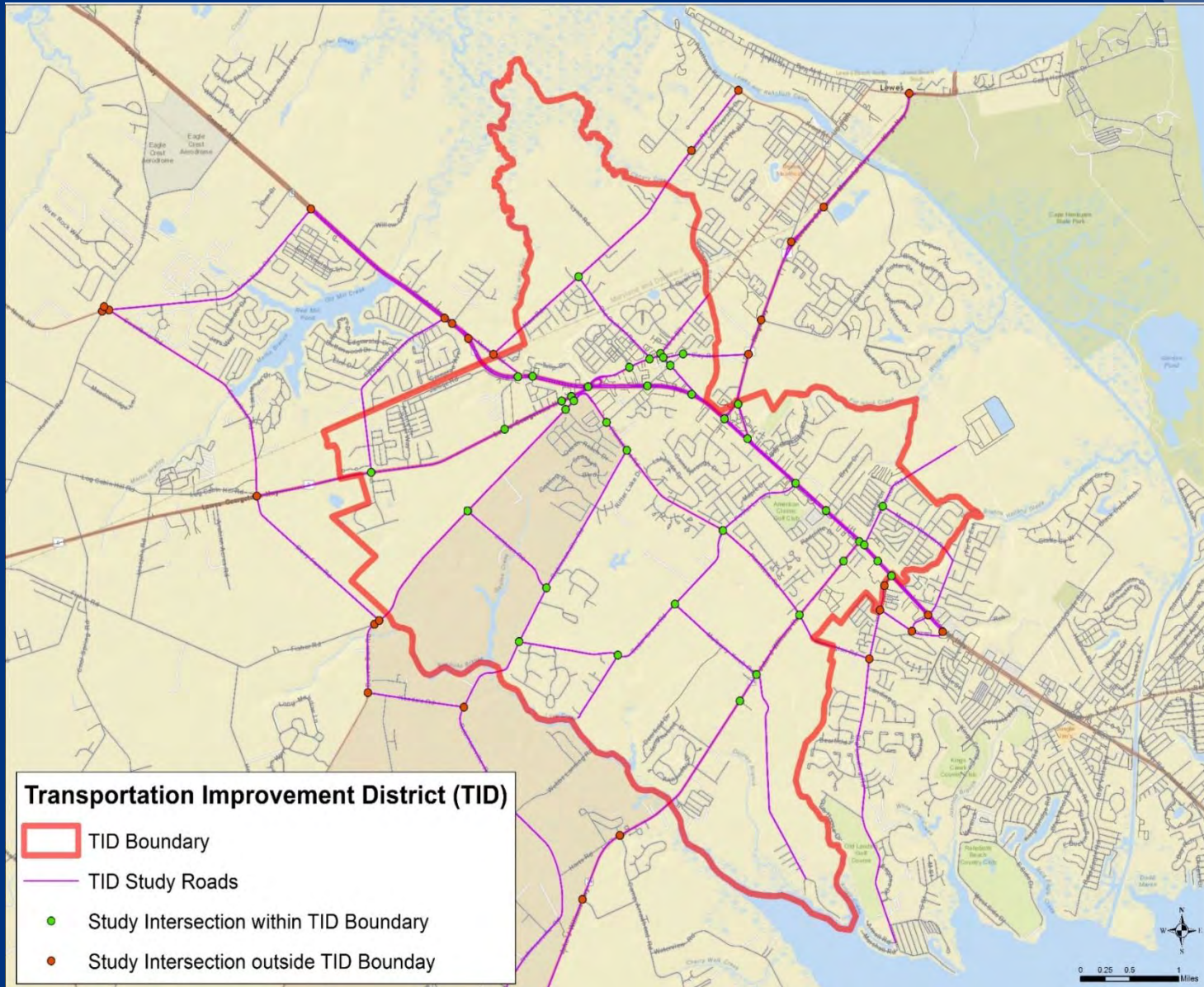
February 21, 2017

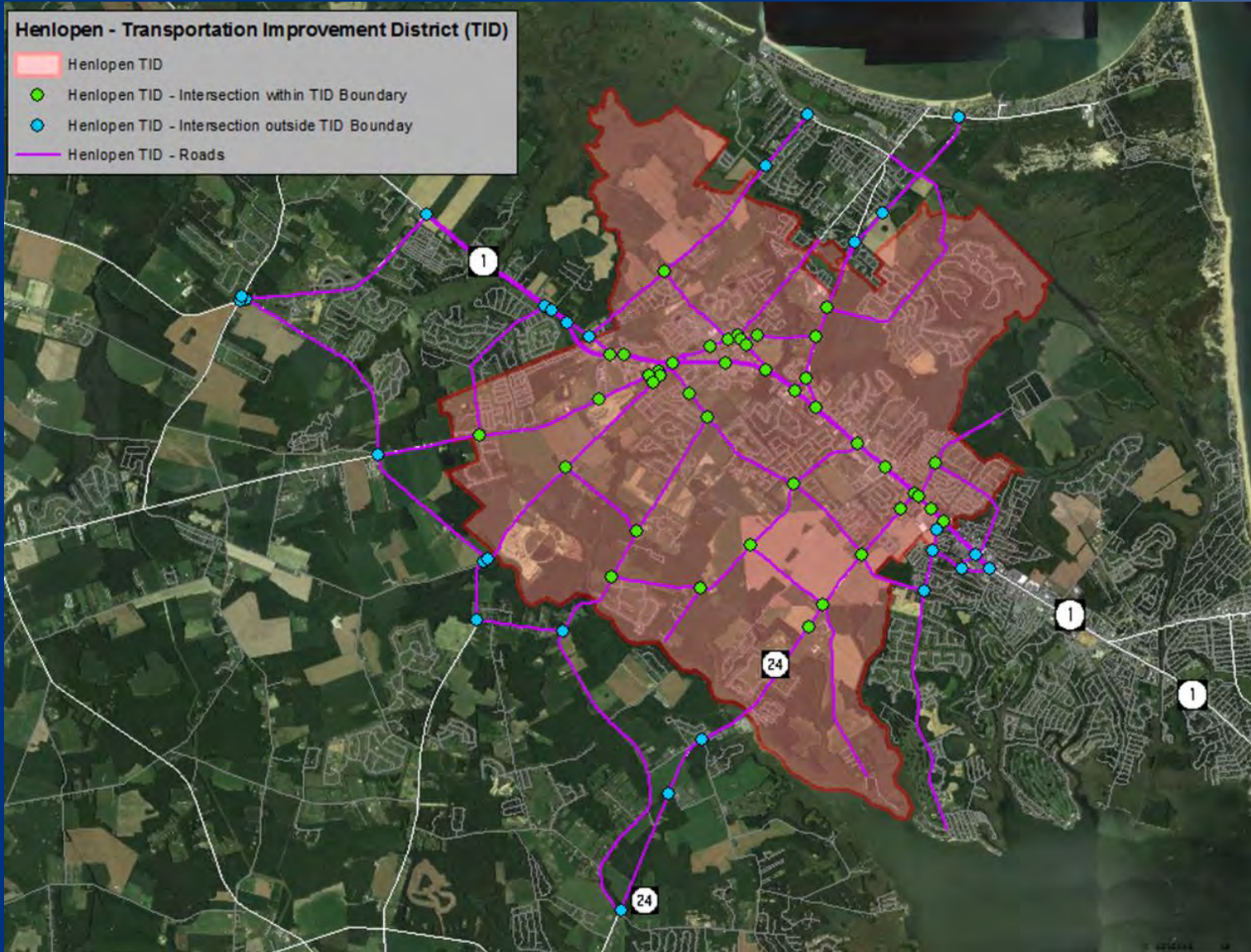


Objectives

- Boundary Changes
- Existing Conditions
- Service Standards
- Land Use Projections
- Next Steps







Existing Conditions

- ⦿ Peak Hour Congestion
 - Weekday AM
 - Weekday PM
 - Summer Saturday Midday
- ⦿ Road Segments
 - Lane Width
 - Shoulder Width
 - Presence of Sidewalks or Paths



Peak Hour Congestion

Intersection Level of Service (LOS) is measured by the time that vehicles are delayed by having to pass through.

| Level of Service | Signalized (sec/veh) | Unsignalized (sec/veh) |
|------------------|----------------------|------------------------|
| A | ≤ 10 | ≤ 10 |
| B | >10-20 | >10-15 |
| C | >20-35 | >15-25 |
| D | >35-55 | >25-35 |
| E | >55-80 | >35-50 |
| F | >80 | >50 |



Existing Conditions - Congestion

Intersections with at least one approach LOS D or worse

◎ Overall

- AM Peak Hour - 39% (26% w/out SR 1)
- PM Peak Hour - 49% (36% w/out SR 1)
- Summer Saturday - 54% (40% w/out SR 1)

◎ SR 1

- AM Peak Hour - 85%
- PM Peak Hour - 85%
- Summer Saturday - 92%



Existing Conditions - Congestion

| Henlopen TID | | Intersection Data - Existing Conditions | | HCM 2010 LOS | | |
|--------------|--|--|------------|---|---|---|
| No. Street 1 | Street 2 | inside/outside Participant Boundary | AM | PM | Summer SAT | |
| 1 | US Route 9 (Lewes-Georgetown High)/Sweetbriar Rd/Dairy Farm Rd | Out | C | C | C | |
| 2 | US Route 9 (Lewes-Georgetown High)/Mtns Conaway Rd/Lakeview Blvd | In | NB-C, SB-C | NB-C, SB-D | NB-C, SB-E | |
| 3 | US Route 9 (Lewes-Georgetown High)/Nassau Commons Boulevard | In | SB-C | SB-D | SB-F | |
| 4 | US Route 9 (Lewes-Georgetown High)/Church St | In | NB-C | NB-D | NB-F | |
| 5 | US Route 9 (Lewes-Georgetown High)/DE Route 1D (aka Belltown Rd) | In | F | D | F | |
| 6 | US Route 9 (Dartmouth Dr) | In | EB-F | EB-C | EB-F | |
| 7 | US Route 9 (Kings Highway) | Clay Rd | Out | EB-F | EB-F | |
| 8 | US Route 9 (Kings Highway) | Gills Neck Rd | Out | C | D | |
| 9 | US Route 9 (Freeman Highway) | Kings Highway | Out | NB, Lane LOS-B ¹ | NB, Lane LOS-C ¹ | NB, Lane LOS-C ¹ |
| 10 | US Route 9 (Freeman Highway) | Monroe Ave | Out | SE-A, NW-B | SE-B, NW-E | SE-C, NW-C |
| 11 | US Route 9 (Freeman Highway) | Cape Henlopen Dr | Out | NB-A | NB-B | NB-E |
| 12 | US Route 9B (Savannah Rd) | Villages at Five Points entrance | In | B | C | C |
| 13 | US Route 9B (Savannah Rd) | Old Orchard Rd | In | NB-D, SE-F | NB-E, SE-F | NB-F, SE-F |
| 14 | US Route 9B (Savannah Rd) | Wescoats Rd | In | B | B | B |
| 15 | DE Route 1 | Cave Neck Rd | Out | NB, NE-C, SB, NE-E ² | NB, NE-C, SB, NE-C, SW-F ² | NB, NE-D, SB, NE-E ² |
| 16 | DE Route 1 | Mtns Conaway Rd | Out | NB, NE-C, SB, NE-E, SW-F ² | NB, NE-D, SB, NE-E, SW-F ² | NB, NE-E, SB, NE-E, SW-F ² |
| 17 | DE Route 1 | Old Mill Rd | Out | NB, NE-C, SW-A, SB, SW-C ² | NB, NE-D, SW-A, SB, SW-C ² | NB, NE-E, SW-F, SB, SW-D ² |
| 18 | DE Route 1 | Nassau Rd (North) | Out | NB, NE-F, SW-A, SB, SW-D ² | NB, NE-F, SW-C, SB, SW-C ² | NB, NE-F, SW-A, SB, SW-F ² |
| 19 | DE Route 1 | Nassau Rd (South) | In | NB, N-D, S-D, SB, N-E, S-E ² | NB, N-F, S-F, SB, N-E, S-E ² | NB, N-F, S-F, SB, N-F, S-F ² |
| 20 | DE Route 1 | Talig Drive/Slipper Shell Way | In | NB, N-E, S-C, SB, N-E, S-C ^{2,4} | NB, N-E, S-E, SB, N-E, S-C ^{2,4} | NB, N-E, S-E, SB, N-E, S-F ^{2,4} |
| 21 | DE Route 1 | US Route 9/Savannah Rd | In | D | D | D |
| 22 | DE Route 1 | Shady Rd/Marsh Rd | In | NB, NE-F, SW-B, SB, NE-D, SW-B | NB, NE-F, SW-D, SB, NE-C, SW-B | NB, NE-E, SW-D, SB, NE-F |
| 23 | DE Route 1 | Wescoats Rd | In | C | C | B |
| 24 | DE Route 1 | US Route 9/Farmouth Dr | In | D | D | F |
| 25 | DE Route 1 | Kings Highway | In | SB-C | SB-C | SB-D |
| 26 | DE Route 1 | Postal Lane | In | C | C | D |
| 27 | DE Route 1 | Tanger Outlets/Midway Galleria | In | A | D | C |
| 28 | DE Route 1 | DeJawar Route 24 | In | C | C | D |
| 29 | DE Route 1 | Wolfe Neck Rd | In | SB-D | SB-F | SB-F |
| 30 | DE Route 1 | Rehoboth Mall | In | A (HCM 2000) ¹ | A (HCM 2000) ¹ | A (HCM 2000) ¹ |
| 31 | DE Route 1 | Old Landing Rd | In | C | C | C |
| 32 | DE Route 1 | Munchy Branch Rd/Miller Rd | Out | B | C | B |
| 33 | DE Route 1 | Airport Rd | Out | No HCM LOS given ³ | No HCM LOS given ³ | No HCM LOS given ³ |
| 34 | DE Route 23 (Beaver Dam Rd) | Kendalle Rd | Out | WB-C | WB-E | WB-C |
| 35 | DE Route 23 (Beaver Dam Rd) | Fisher Rd | Out | EB-C | EB-C | EB-C |
| 36 | DE Route 23 (Beaver Dam Rd) | Dairy Farm Rd | Out | SB-B | SB-C | SB-C |
| 37 | DE Route 23 (Beaver Dam Rd) | Jimtown Rd | In | NW-B | NW-C | NW-B |
| 38 | DE Route 23 (Beaver Dam Rd) | Church St/Salt Marsh Blvd | In | NB-C, SB-B | NB-C, SB-B | NB-E, SB-C |
| 39 | DE Route 23 (Beaver Dam Rd) | DE Route 1D (aka Belltown Rd)/Plantation | In | No HCM LOS given ³ | No HCM LOS given ³ | No HCM LOS given ³ |
| 40 | DE Route 24 | Robinsonville Rd/Angola Rd | Out | D | D | F |
| 41 | DE Route 24 | Delwyn Way | Out | WB-C | WB-C | WB-C |
| 42 | DE Route 24 | Camp Arrowhead Rd | Out | E | C | C |
| 43 | DE Route 24 | Beacon Middle School/Love Creek Elem S | In | A | B | A |
| 44 | DE Route 24 | Mulberry Knoll Rd | In | SB-C, NW-D | SE-D, NW-D | SB-F, NW-F |
| 45 | DE Route 24 | Plantation Rd/Warrington Road | In | D | F | F |
| 46 | DE Route 24 | Rehoboth Mall Service Rd/Hudson Way | In | A | B | A |

| Henlopen TID | | Intersection Data - Existing Conditions | | HCM 2010 LOS | | |
|--------------|------------------|---|-----|--------------------|--------------------|--------------------|
| No. Street 1 | Street 2 | inside/outside Participant Boundary | AM | PM | Summer SAT | |
| 47 | New Rd | Nassau Rd | Out | SW-B | SW-B | SW-B |
| 48 | New Rd | Old Orchard Rd | In | NW-B | NW-B | NW-B |
| 49 | New Rd | Park Dr | Out | SE-A | SE-A | SE-B |
| 50 | New Rd | Pilottown Rd | Out | NE-A | NE-A | NE-B |
| 51 | Wescoats Rd | Clay Rd | In | WB-B | WB-B | WB-B |
| 52 | Wescoats Rd | Marsh Rd | In | NE-C, SW-C | NE-C, SW-D | NE-C, SW-C |
| 53 | Clay Rd | Marsh Rd | In | NE-A | NE-A | NE-A |
| 54 | Wolfe Neck Rd | Munchy Branch Rd | In | WB-A | WB-A | WB-A |
| 55 | Airport Rd | Miller Rd | Out | NB-B, SB-B | NB-B, SB-B | NB-C, SB-B |
| 56 | Old Landing Rd | Rehoboth Mall Entrance | In | SE-B, NW-A | SE-F, NW-B | SE-F, NW-C |
| 57 | Old Landing Rd | Airport Rd | Out | WB-B | WB-D | WB-F |
| 58 | Old Landing Rd | Warrington Rd/Strawberry Way | Out | E-C, W-A, N-B, S-A | E-C, W-A, N-B, S-C | N-B, W-B, N-C, S-D |
| 59 | Robinsonville Rd | Kendalle Rd | Out | EB-B | EB-B | EB-C |
| 60 | Robinsonville Rd | Cedar Grove Rd | In | WB-B | WB-B | WB-B |
| 61 | Robinsonville Rd | Jimtown Rd | In | SB-A | EB-A | EB-A |
| 62 | Robinsonville Rd | Plantation Rd | In | NB-C | NB-C | NB-C |
| 63 | Plantation Rd | Shady Rd/Saltmarsh Blvd | In | C | F | C |
| 64 | Plantation Rd | Cedar Grove Rd/Postal Lane | In | B | B | C |
| 65 | Cedar Grove Rd | Mulberry Knoll Rd | In | NW-B | NW-B | NW-B |
| 66 | Cedar Grove Rd | Ward Rd | In | NB-B | NB-A | NB-A |
| 67 | Cave Neck Rd | Sweetbriar Rd | Out | SE-C, NW-C | SE-B, NW-B | SE-B, NW-B |
| 68 | Cave Neck Rd | Hudson Rd | Out | NB-C, SB-C | NB-B, SB-B | NB-B, SB-B |
| 69 | Hudson Rd | Sweetbriar Rd | Out | WB-A | WB-A | WB-A |

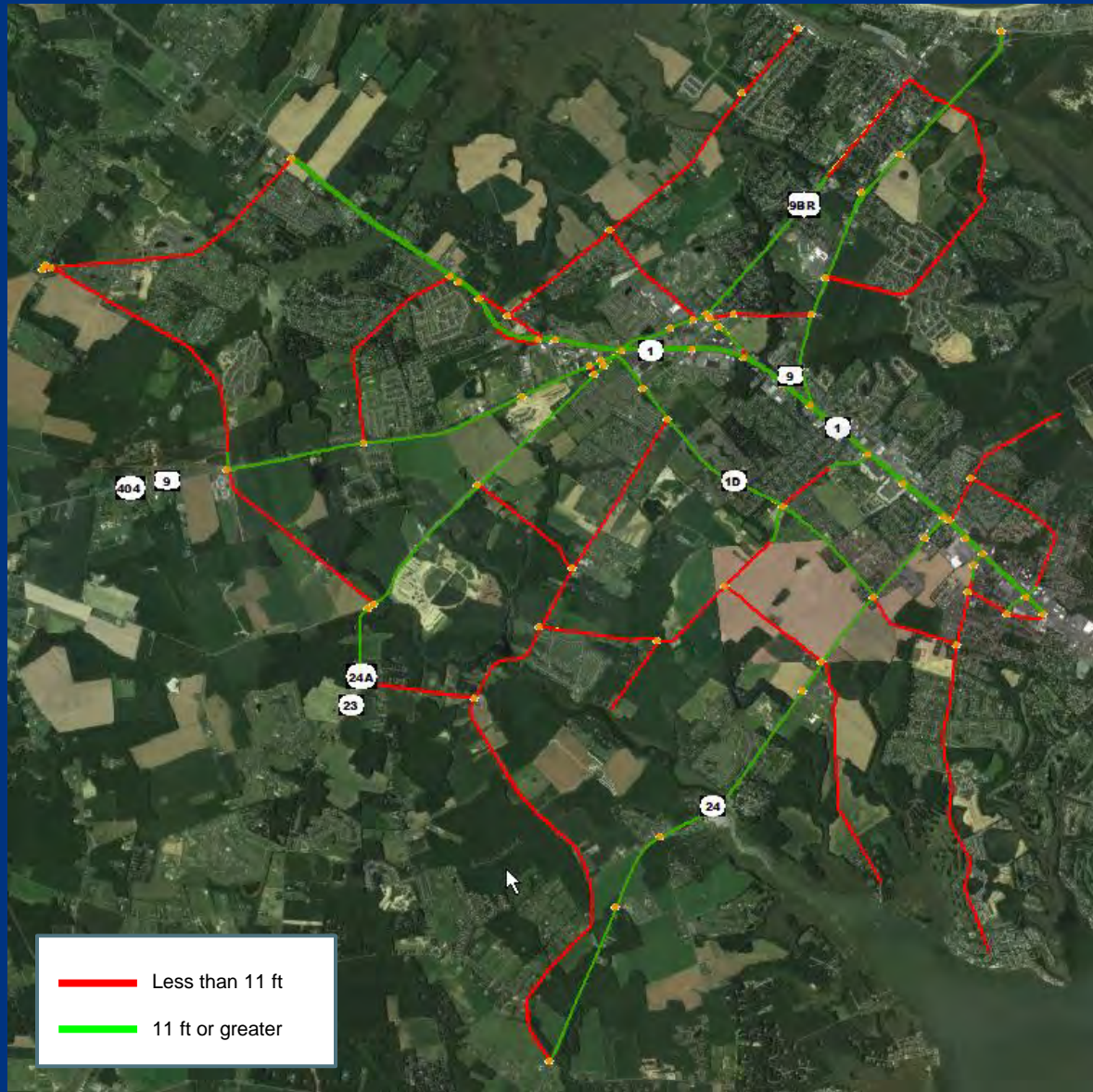
1) Intersection modeled as standard Synchro modeled to get LOS
 2) Direction of travel specified as HCM 2010 LOS with the model having 80% of signal time. Using proportionate modeling with a proportionate allocation of SAT for the major direction. See the full project report for more details on the modeling process.
 3) This intersection was modeled as a TPOC (no intersection) as it has a leading signal.
 4) HCM 2010 Data: LOS values from intersection configurations (LOS) are based on HCM 2000.
 5) HCM 2010 Data: LOS values from intersection configurations (LOS) are based on HCM 2000.
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Existing Conditions - Congestion



Existing Conditions – Lane Width



Next Steps:

Service Standards – What is “success” ?

- ⦿ Defined in terms of
 - Levels of Service
 - Lane widths
 - Shoulder widths
 - Sidewalks
 - Transit service
 - Aesthetics
 - Other Considerations
- ⦿ How? A public process



Next Steps: Land Use Projections

- ⦿ Traffic is a function of land use
- ⦿ Better land use projections →
Better traffic projections →
Better road designs
- ⦿ Goal: parcel –level land use forecasts for 2040



Additional Steps: Development of DeIDOT Projects

- ⦿ Projects to Improve Road Segments
- ⦿ Future Traffic Projections
- ⦿ Projects to Improve Intersections



Additional Steps: Establishing a Funding Mechanism

- ⦿ Assembly of a TID Capital Transportation Program
- ⦿ Deciding on a Funding Formula
 - What share of the project costs will the TID fund?
 - How will that cost be apportioned among developers and who, precisely, is a developer?
- ⦿ Developing a Fee Schedule
 - Making the above apportionment into a set of fees
- ⦿ Deciding the Administration
 - Who will collect the fees and when? Who will hold them?
 - How do we handle developers who want to pay “in kind”?



Establishing a Funding Mechanism: An Example from Southern New Castle

| Road | 2015 Const. Estimate | Right-of-Way | Inflation 2016 | Inflation 2017 | Inflation 2018 |
|-----------------------------|-----------------------------------|-------------------------|----------------------|------------------------|------------------|
| Boyds Corner Road | \$ 24,033,733.00 | \$ 2,800,000.00 | \$ 153,815.89 | \$ 566,738.53 | \$ - |
| Cedar Lane Road | \$ 10,100,000.00 | \$ 1,500,000.00 | \$ 64,640.00 | \$ 244,957.44 | \$ - |
| Jamison Corner Road | \$ 3,569,158.99 | \$ 519,727.45 | \$ - | \$ - | \$ - |
| Jamison Corner Relocated | \$ 9,600,000.00 | \$ 115,832.98 | \$ 61,440.00 | \$ 205,322.73 | \$ - |
| N412A | \$ 3,281,600.25 | \$ 385,541.75 | \$ - | \$ - | \$ - |
| Lorewood Grove Road West | \$ 6,000,000.00 | \$ 3,500,000.00 | \$ 38,400.00 | \$ 200,306.40 | \$ - |
| Lorewood Grove Road East | \$ 6,300,000.00 | \$ 2,500,000.00 | \$ 40,320.00 | \$ 185,646.72 | \$ - |
| Ratledge Road | \$ 7,600,000.00 | \$ 1,200,000.00 | \$ 48,640.00 | \$ 185,821.44 | \$ - |
| Shallcross Lake Road | \$ 5,500,000.00 | \$ 960,000.00 | \$ 35,200.00 | \$ 136,399.20 | \$ - |
| Total | \$ 75,984,492.24 | \$ 13,481,102.18 | \$ 442,455.89 | \$ 1,725,192.46 | \$ - |
| | | | | Contributions | DeIDOT |
| | | | | \$ 44,201,520.64 | \$ 44,201,520.64 |
| | Total Potential Dollars Available | | | | |



Establishing a Funding Mechanism: An Example from Southern New Castle

| Property Identification | Owner | Use | Size (units/sf) | Unit Cost | Total Committed | Cash Paid | Recoupment Credit | Escalation | Balance Due* |
|--|-------|--------------------------|-----------------|---------------|-----------------|---------------|----------------------|------------|-----------------|
| Bayberry - North | | Residential SF Detached | 557 | \$3,800.00 | \$ 2,116,600.00 | | | | \$ 2,116,600.00 |
| Bayberry - North | | Residential SF Attached | 392 | \$3,200.00 | \$ 1,254,400.00 | | | | \$ 1,254,400.00 |
| Bayberry - South | | Residential SF Detached | 969 | \$3,800.00 | \$ 3,682,200.00 | | | | \$ 3,682,200.00 |
| Bayberry - South | | Residential SF Attached | 100 | \$3,200.00 | \$ 320,000.00 | | | | \$ 320,000.00 |
| Bayberry - South | | Multi-Family Residential | 120 | \$2,800.00 | \$ 336,000.00 | | | | \$ 336,000.00 |
| Bayberry Town Center | | General Commercial | 380,244 | \$ 3.50 | \$ 1,330,854.00 | | | | \$ 1,330,854.00 |
| Bayberry Town Center | | General Office | 178,960 | \$ 3.50 | \$ 626,360.00 | | | | \$ 626,360.00 |
| Boyd's Corner Farm | | Residential SF Detached | 115 | \$3,800.00 | \$ 437,000.00 | | | | \$ 437,000.00 |
| Boyd's Corner Farm | | General Commercial | 110,000 | \$ 3.50 | \$ 385,000.00 | | | | \$ 385,000.00 |
| Boyd's Corner Farm | | General Office | 0 | \$ 3.50 | \$ - | | | | \$ - |
| Boyd's Corner Shops | | General Office | 13,500 | \$ 3.50 | \$ 47,250.00 | | | | \$ 47,250.00 |
| Canal View at Crossland ¹ | | Residential SF Detached | 432 | \$1,694.44 | \$ 732,000.00 | | | | \$ 732,000.00 |
| Cedar Lane | | Residential SF Detached | 77 | \$3,800.00 | \$ 292,600.00 | | | | \$ 292,600.00 |
| MOT Charter School | | Institutional | 100,000 | \$ 2.00 | \$ 200,000.00 | | | | \$ 200,000.00 |
| Northeast Christian Church | | Institutional | 100,000 | \$ 2.00 | \$ 200,000.00 | | | | \$ 200,000.00 |
| Lorewood Estates | | Residential SF Detached | 10 | \$3,800.00 | \$ 38,000.00 | | | | \$ 38,000.00 |
| Pleasanton | | Residential | 300 | \$3,800.00 | \$ 1,140,000.00 | | | | \$ 1,140,000.00 |
| Scott Run Business Park | | General Commercial | 104,000 | \$ 3.50 | \$ 364,000.00 | | | | \$ 364,000.00 |
| Scott Run Business Park | | General Office | 1,200,000 | \$ 3.50 | \$ 4,200,000.00 | | | | \$ 4,200,000.00 |
| Whitehall | | Residential SF Detached | 1,300 | \$3,800.00 | \$ 4,940,000.00 | | | | \$ 4,940,000.00 |
| Whitehall | | Residential SF Attached | 1,350 | \$3,200.00 | \$ 4,320,000.00 | | | | \$ 4,320,000.00 |
| Whitehall | | Multi-Family Residential | 600 | \$2,800.00 | \$ 1,680,000.00 | | | | \$ 1,680,000.00 |
| Whitehall | | General Commercial | 286,000 | \$ 3.50 | \$ 1,001,000.00 | | | | \$ 1,001,000.00 |
| Whitehall | | General Office | 169,000 | \$ 3.50 | \$ 591,500.00 | | | | \$ 591,500.00 |
| Whitehall | | Institutional | 237,900 | \$ 2.00 | \$ 475,800.00 | | | | \$ 475,800.00 |
| Winchelsea | | Residential SF Detached | 181 | \$3,800.00 | \$ 687,800.00 | | | | \$ 687,800.00 |
| Winchelsea | | Residential SF Attached | 178 | \$3,200.00 | \$ 569,600.00 | | | | \$ 569,600.00 |
| Winchelsea | | Multi Family Residential | 154 | \$2,800.00 | \$ 431,200.00 | | | | \$ 431,200.00 |
| Other Lands (assume 1 per acre) | | Residential SF Detached | 2,012 | \$3,800.00 | \$ 7,645,600.00 | | | | \$ 7,645,600.00 |
| | | | | | \$40,044,764.00 | \$0.00 | \$0.00 | \$0.00 | \$40,044,764.00 |
| * includes escalation through Jan. 31, _____ | | | | | | | | | |
| ¹ - Subject to a separate 2007 agreement (contribution rate is less for but owner is also responsible for the full cost of his entrance improvement on Lorewood Grove Road) | | | | | | | | | |
| ² - projected, may change over time | | | | | | | | | |
| TOTAL CONTRIBUTED | | | | As of: | | \$0.00 | | | |



Establishing a Funding Mechanism: An Example from Southern New Castle

| | | |
|------------------------------------|------------------------|------------------------|
| Single Family Detached Residential | \$3,905 per unit | \$4,100 per unit |
| Single Family Attached Residential | \$3,288 per unit | \$3,452 per unit |
| Multi-Family Residential | \$2,877 per unit | \$3,021 per unit |
| Office/Commercial | \$3.60 per square foot | \$3.78 per square foot |
| Institutional | \$2.06 per square foot | \$2.16 per square foot |



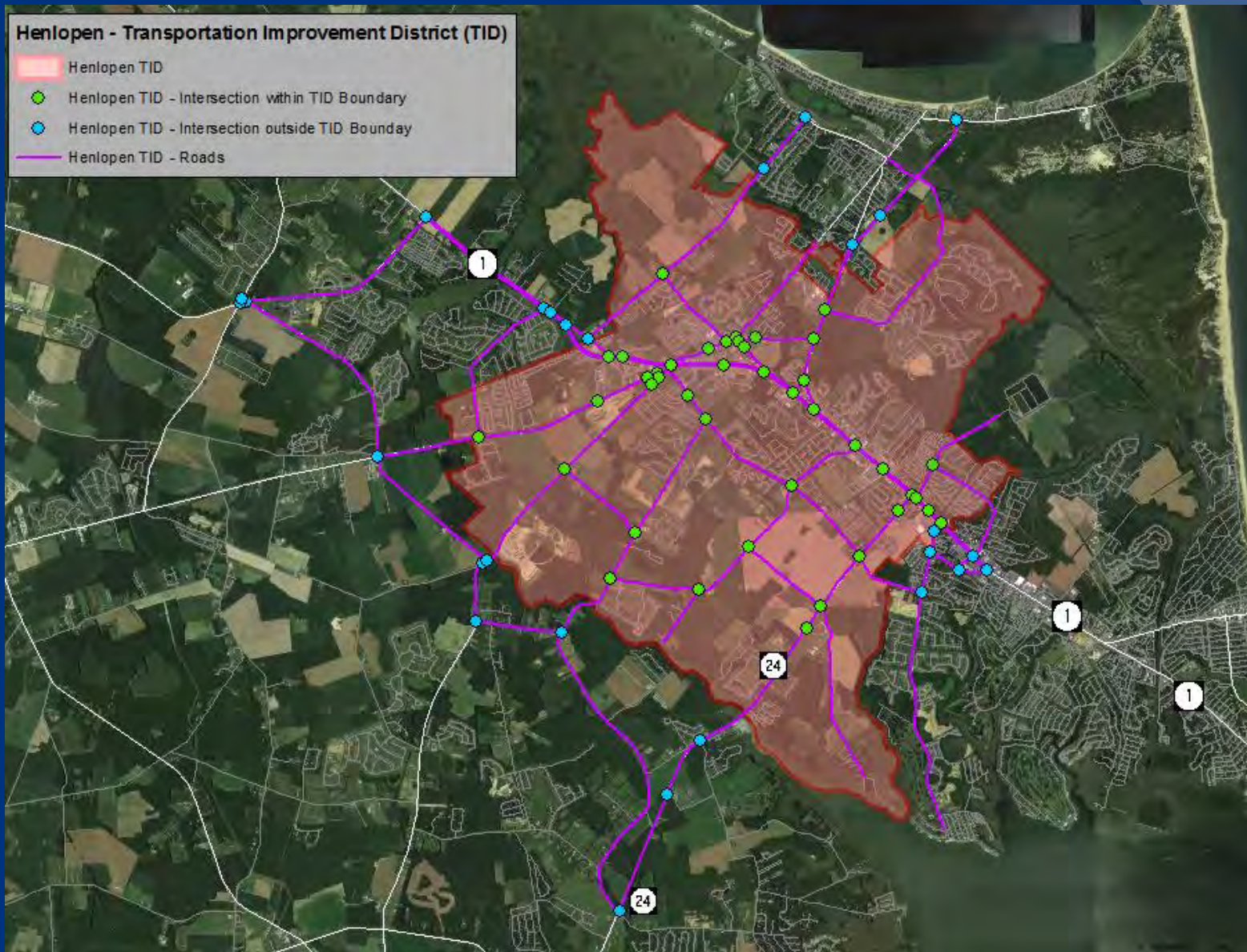
Why Create a TID?

- ⦿ Comprehensive Infrastructure Planning
- ⦿ TID Projects Advance in DeIDOT's CTP
- ⦿ TID Fees Stay Local
- ⦿ Equitable Treatment of Competing Developers
- ⦿ Known Costs for Developers
- ⦿ Expedited Development Reviews



Henlopen - Transportation Improvement District (TID)

- Henlopen TID
- Henlopen TID - Intersection within TID Boundary
- Henlopen TID - Intersection outside TID Boundary
- Henlopen TID - Roads



Questions?

◎ Please contact:

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