



COMPASS
INFRASTRUCTURE GROUP

Boundless Elford Multifamily Development

445 E Dublin Granville Rd., Worthington, OH

Traffic Impact Study

Revision 1

June 17th, 2026



Introduction

This report presents the Traffic Impact Study (TIS) for:

- The proposed Boundless multifamily development located southeast of the intersection of E. Dublin Granville Road and Proprietors Road in Worthington, Ohio.
- The *existing* Boundless campus located west of the multifamily development. It will expand services and add 60 students and 60 employees over the next 10 years. Half will be a student-based program, which currently exists on campus, and the other half will be an adult day program.

The study evaluates traffic operations for the proposed roundabout and the existing signalized intersection at E. Dublin Granville Road (SR 161) and Proprietors Road during the AM and PM peak hours for both the opening year (2026) and the horizon year (2036). The report also includes a qualitative assessment of pedestrian connectivity and potential crossover between the proposed development and adjacent residential areas to the south and west.

Area Conditions

The proposed multifamily development is located at 445 E. Dublin Granville Road (SR 161) in Worthington, Ohio, southeast of the intersection of SR 161 and Proprietors Road. Site access is proposed *only* via the existing Boundless property access, which connects to SR 161 via the south leg of the Proprietors Road intersection.

SR 161 in this area is a three-lane east–west principal arterial consisting of one through lane in each direction and a center two-way left-turn lane. The posted speed limit is 35 mph. Proprietors Road is a two-lane road that serves as a major collector to the north and a local road to the south, with a posted speed limit of 35 mph. The south leg of the intersection serves as access to the Boundless property. This intersection is part of a coordinated signal system along SR-161, integrated with both the Dublin–Granville Road and High Street corridors.

The proposed development consists of 246 low-rise multifamily residential units on approximately 19.9 acres. The site plan and additional development details are provided in *Appendix A*. The Boundless expansion discussed in the Introduction is also included in all analyses.

Scope of Study

In coordination with the City of Worthington, the following study elements were selected for evaluation:

1. Existing signalized intersection of SR-161 and Proprietors Road
2. Proposed roundabout on Proprietors Road within the Boundless site, which will provide primary access to the proposed development
3. Pedestrian connectivity and potential crossover between the proposed development, the Boundless site, and adjacent residential areas

Traffic Volumes and Conditions

A 12-hour turning movement count was conducted at the intersection of SR-161 and Proprietors Road on December 17, 2025, by Quality Counts, LLC. Linear annual growth rates for each approach were obtained from MORPC based on the collected traffic data. The turning movement count data and corresponding growth rate information are provided in *Appendix B*.

Analysis

Background Traffic

The opening year and horizon year for the analysis are 2026 and 2036, respectively. AM and PM peak-hour background (No Build) traffic volumes for both analysis years were developed by applying MORPC-provided linear annual growth rates to the existing turning movement count data.

Trip Generation

Trip generation for the proposed multifamily development was estimated using the *Institute of Transportation Engineers (ITE) Trip Generation Manual*, 12th Edition. Land Use Code (LUC) 220 – Multifamily Housing (Low-Rise) was utilized for the analysis. This is typical, accepted national practice for this type of analysis. The resulting AM and PM peak hour trip generation summaries are provided in *Appendix C*.

The additional trips generated by the Boundless campus were estimated separately because there is no ITE land-use code that directly represents the proposed Boundless operation, which is unique and includes a mix of student-based programs and adult-day programs. Therefore, campus trip generation was estimated using the existing intersection counts collected at the Worthington Boundless campus, with adjustments based on existing and proposed campus operations:

The existing Worthington campus includes approximately 60 students and 150 employees, for a total of 210 people. Boundless confirmed that approximately 60 employees are directly associated with the existing student-based program of 60 students. Therefore, the existing student-based program represents approximately 120 of the 210 total people on campus, or 57% of the existing campus activity.

The proposed Boundless expansion includes 60 additional students and 60 additional employees split evenly between the student-based program and the adult-day program. The adult-day program will operate from approximately 9:30 AM to 3:00 PM with students arriving and departing by small bus or van. Since the adult-day student trips are expected to occur outside the study peak hours, the 30 adult-day students are not included in the peak-hour trip-generation estimate. Additionally, at most half of the associated 30 adult-day employees are expected to contribute to peak-hour traffic. Therefore, 75 of the 120 proposed students and employees are expected to contribute to peak-hour traffic, resulting in an adjustment factor of 0.62.

Based on these assumptions, the proposed Boundless campus peak-hour trips were estimated as follows:
-Existing Campus Peak Hour Trips \times 0.57 \times 0.62 = 0.35 \times Existing Campus Peak Hour Trips

Trip Distribution

Site-generated traffic was distributed and assigned based on existing traffic patterns observed in the peak-hour turning movement count data (*see Appendix D*) and applied to the signalized intersection at SR-161 and Proprietors Road.

For the proposed roundabout, traffic was assigned by separating existing Boundless traffic from site-generated traffic. Existing Boundless traffic, as reflected in the turning movement count data was assigned to the south and west legs of the roundabout with an assumed 50/50 distribution, while the development site-generated traffic was assigned to the east leg. This approach assumes no traffic interaction between Boundless and the proposed development.

The following traffic scenarios were developed for analysis:

- **Opening Year No Build (2026):** Existing traffic volumes with applied background growth
- **Opening Year Build (2026):** Opening Year No Build volumes with development site-generated traffic and the Boundless expansion traffic added

- **Horizon Year No Build (2036):** Opening Year No Build volumes projected to the horizon year
- **Horizon Year Build (2036):** Horizon Year No Build volumes with development site-generated traffic and the Boundless expansion traffic added

Intersection Operational Analysis

Operational analysis for the signalized intersection of SR-161 and Proprietors Road and the proposed single-lane roundabout was performed using Highway Capacity Software (HCS 2025, Version 8.4), consistent with methodologies outlined in the *Highway Capacity Manual (HCM), 7th Edition*.

During the AM and PM peak hours, a Level of Service (LOS) D or better is the standard, accepted threshold for overall intersection operations, with LOS E considered acceptable for individual movements. The proposed signal timings from the Worthington Signal Corridor Study were used to analyze both the Build and No-Build conditions. Signal timing optimization was performed while maintaining the existing cycle length and offsets to preserve system coordination, and the results were compared across scenarios.

Pedestrian Cross-over Analysis

Pedestrian activity has been observed between the existing Boundless development and adjacent neighborhoods. This study documented the probable points of these existing pedestrian connections and identified potential future pedestrian connection points. A qualitative assessment was conducted to evaluate how the proposed development may affect existing pedestrian activity on the Boundless property and in the adjacent neighborhood.

Results

Capacity Analysis

The results of the capacity analysis are summarized in *Table 1*. During the AM peak hour, the intersection operates at acceptable LOS under all scenarios.

During the PM peak hour, the intersection operates at LOS E under the proposed signal timing for both the Opening Year and Horizon Year, with and without site traffic. This does not meet the established LOS criteria. The eastbound and westbound through movements also operate at LOS F during the PM peak hour, Horizon Year, Build and No Build conditions. Unacceptable LOS values are highlighted in red in *Table 1*.

To evaluate potential operational improvements, the signal timing was optimized keeping in mind that the intersection is coordinated with other intersections on the corridor. Both cycle length and offsets were kept the same as the timings from the Worthington signal study report (see *Appendix E Section 1*). The optimized results are presented in the "Build Opt." column in *Table 1*. With timing optimization only, the overall intersection operations improved during both the AM and PM peak hours to acceptable levels. Under horizon year full-build PM peak conditions, the overall intersection LOS improved from LOS E to LOS C, with the average intersection delay reduced from 73 seconds per vehicle to 33 seconds per vehicle. The eastbound through movement improved from LOS F to LOS C, and the westbound through movement improved from LOS F to LOS D.

With signal optimization, all movements operate with acceptable LOS during both AM and PM peak hours under the opening-year and horizon-year build conditions.

All analysis output is provided in *Appendix E*.

Table 1: Signalized LOS Summary (LOS/Seconds of Delay)

| SR-161 & Proprietors Rd. (Signalized) | Approach/ Movement | AM | | | | | |
|--|-----------------------|--------------------|---------------|---------------|--------------------|---------------|------------|
| | | Opening Yr. (2026) | | | Horizon Yr. (2036) | | |
| | | No-Build | Build | Build Opt. | No-Build | Build | Build Opt. |
| | EBL | B/17.2 | B/17.2 | B/10.9 | B/18.5 | B/18.5 | B/12.6 |
| EBT | C/29.7 | C/31.0 | B/17.4 | C/31.4 | C/32.9 | B/19.5 | |
| WBL | B/13.5 | B/15.1 | A/9.4 | B/14.2 | B/16.0 | B/10.7 | |
| WBT | D/37.5 | D/37.5 | B/18.7 | D/42.1 | D/42.1 | C/21.5 | |
| NB | C/28.6 | C/31.6 | D/35.3 | C/28.6 | C/31.6 | C/33.9 | |
| SB | D/36.8 | D/37.6 | D/39.4 | D/38.4 | D/39.4 | D/38.7 | |
| Intersection | C/32.5 | C/32.7 | C/20.7 | D/35.3 | D/35.5 | C/22.6 | |
| | | PM | | | | | |
| EBL | B/18.5 | B/18.5 | B/16.9 | B/18.5 | B/18.5 | C/20.5 | |
| EBT | D/49.9 | E/55.6 | C/24.0 | F/59.4 | F/66.1 | C/29.5 | |
| WBL | B/16.7 | B/19.0 | B/13.8 | B/17.5 | B/19.0 | B/16.4 | |
| WBT | F/82.0 | F/82.0 | C/27.7 | F/98.3 | F/98.3 | D/37.1 | |
| NB | C/31.9 | C/34.8 | D/35.6 | C/32.0 | C/35.0 | C/34.2 | |
| SB | D/43.3 | D/43.0 | D/39.5 | D/46.3 | D/46.1 | D/38.8 | |
| Intersection | E/61.9 | E/62.0 | C/27.2 | E/73.0 | E/73.0 | C/33.2 | |

Roundabout Analysis

Consistent with the Memorandum of Understanding with the City, roundabout operations were evaluated for the Horizon Year Build condition (2036) during the AM and PM peak hours.

The results, summarized in *Table 2*, indicate that the proposed single-lane roundabout operates at LOS A during both peak periods for the Horizon Year Build condition, which represents the highest-volume scenario analyzed. Based on these results, the roundabout will operate at LOS A or better under all other analysis scenarios.

Table 2: Roundabout LOS Summary (LOS/Seconds of Delay)

| Proposed 1x1 Roundabout | Approach | Horizon Yr. Build (2036) | |
|----------------------------|--------------|--------------------------|-------|
| | | AM | PM |
| | EB | A/3.2 | A/3.1 |
| WB | A/3.3 | A/3.2 | |
| NB | A/3.0 | A/3.1 | |
| SB | A/3.8 | A/3.2 | |
| Intersection | A/3.6 | A/3.2 | |

Pedestrian Cross-over Analysis

The site has been visited on five separate occasions since October 2025. The most recent field review occurred in March under conditions highly conducive to pedestrian activity, including observable foot traffic from nearby athletic fields that traveled through adjacent neighborhoods (not crossing into Boundless). Based on these field observations and supplemental research, the following was noted:

- Based on public input and reported behavior, the existing pedestrian attractor is the Boundless campus, with neighborhood residents utilizing the low-volume Boundless roads for recreational walking.
- Multiple opportunities exist for both confident and less-confident pedestrians to traverse between the existing Boundless campus and adjacent neighborhoods. These include a gated emergency access drive and informal connections across grassed and lightly wooded areas. These represent informal, non-designated pedestrian connections.
- Across approximately three hours of cumulative observation time, no pedestrian crossover between the Boundless campus and adjacent neighborhoods was observed.
- The Boundless campus is not a secured facility, and some residents can move freely. While pedestrian crossover is therefore possible under existing conditions, it was not observed during field reviews.

Pedestrian activity is fundamentally driven by the presence of an attractor. Based on verbal reports and public input to the City, existing pedestrian interaction appears to be recreational, with neighborhood residents using the Boundless campus for its low-volume, low-speed roadway environment. Based on public input and reported behavior, the current attractor creating crossover is the Boundless campus, creating flow from the neighborhood to Boundless.

While future residents of the proposed development may also find the remaining campus roadway network suitable for recreational walking, this does not inherently create cross-property pedestrian demand. For meaningful crossover between the development and surrounding neighborhoods to occur, a defined destination or attractor must exist.

Public comments have suggested that retail and social destinations along High Street may serve as such an attractor. However, the closest destinations are approximately 0.9 miles from the proposed development via the most direct route, which is a 20-minute one-way walk, or roughly 1.8 miles (40 minutes) round trip. National planning data consistently indicates that typical acceptable pedestrian walking distances range from 0.25 to 0.50 miles. As such, a round trip to the High Street corridor is well outside the typical pedestrian walkshed and is not expected to function as a meaningful attractor for pedestrian trips.

It could be argued that residents of the proposed development may instead be attracted to walk within adjacent neighborhood streets. However, existing behavior indicates that some neighborhood residents currently choose to walk within the Boundless campus rather than on neighborhood streets, suggesting a preference for the campus environment. It is therefore reasonable to expect that future residents of the development would exhibit similar behavior. This is further supported by limited sidewalk connectivity in adjacent neighborhoods, including streets without sidewalks, which reduces pedestrian comfort compared with the Boundless campus roadway network or the sidewalks along SR-161 and Proprietors Road.

The one key attractor is the existing elementary school. It is nearly 0.5 miles from the proposed development at its closest point. It's roughly 0.7 miles from its furthest point. This distance is at or beyond the upper limit of typical elementary school walking distances, particularly given incomplete sidewalk connectivity and indirect routing. As a result, walking is expected to be limited, with school bus service or parental drop-off likely to be the primary modes of access.

Conclusions & Recommendations

- *Table 1* shows that after signal optimization, Build and No Build results show improved operations over the existing intersection operations.
- For Proprietors Rd. & SR-161, no operational issues were identified during the AM peak hour in either the opening year or the horizon year.
- During the PM peak hour, signal optimization is recommended to improve LOS for all approaches once buildout and occupancy occur.
- For the single-lane roundabout, no operational issues are expected under any conditions.
- There is limited evidence of a pedestrian-attractor that would result in a measurable increase in pedestrian crossover between the proposed development to the adjacent neighborhoods. While the nearby elementary school may contribute to a minor increase in pedestrian activity, any such increase is expected to be minimal.

Appendix A

Site Plan

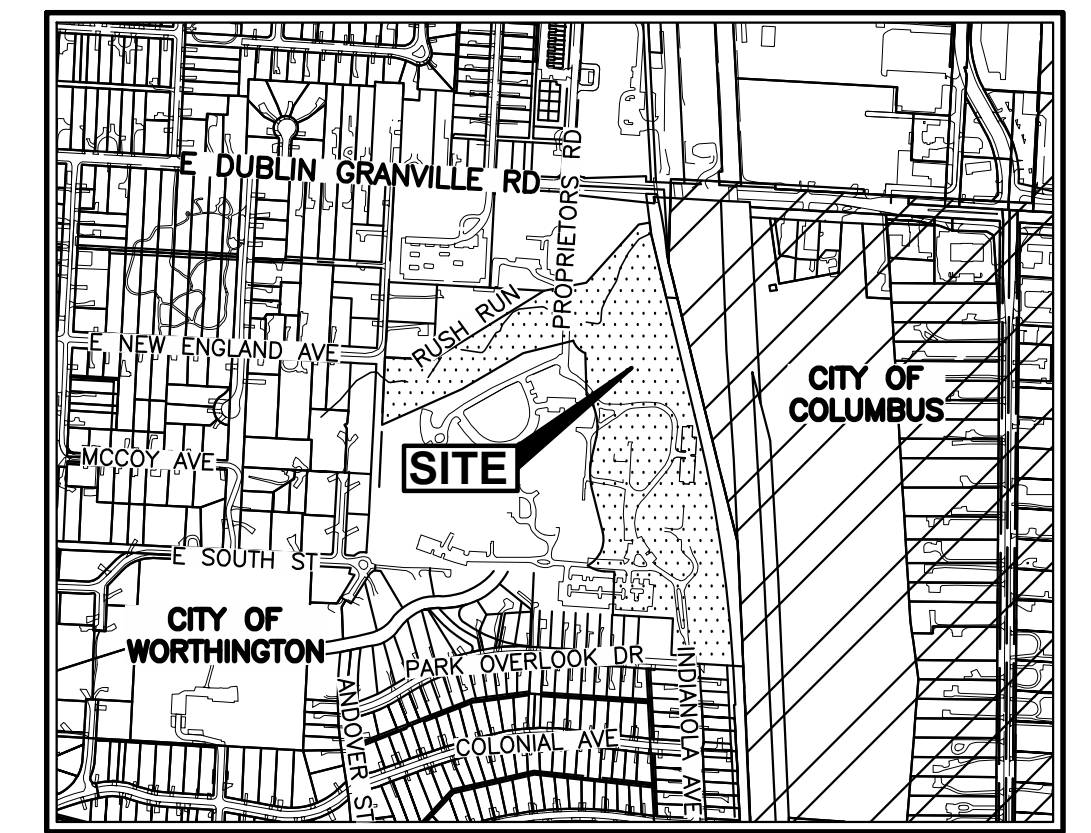
PRELIMINARY SITE PLAN

BOUNDLESS

ELFORD DEVELOPMENT

CITY OF WORTHINGTON, OHIO

2026



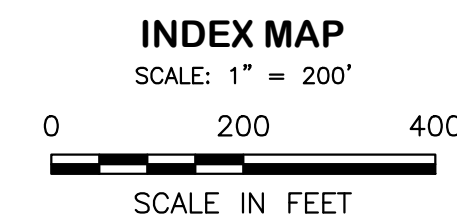
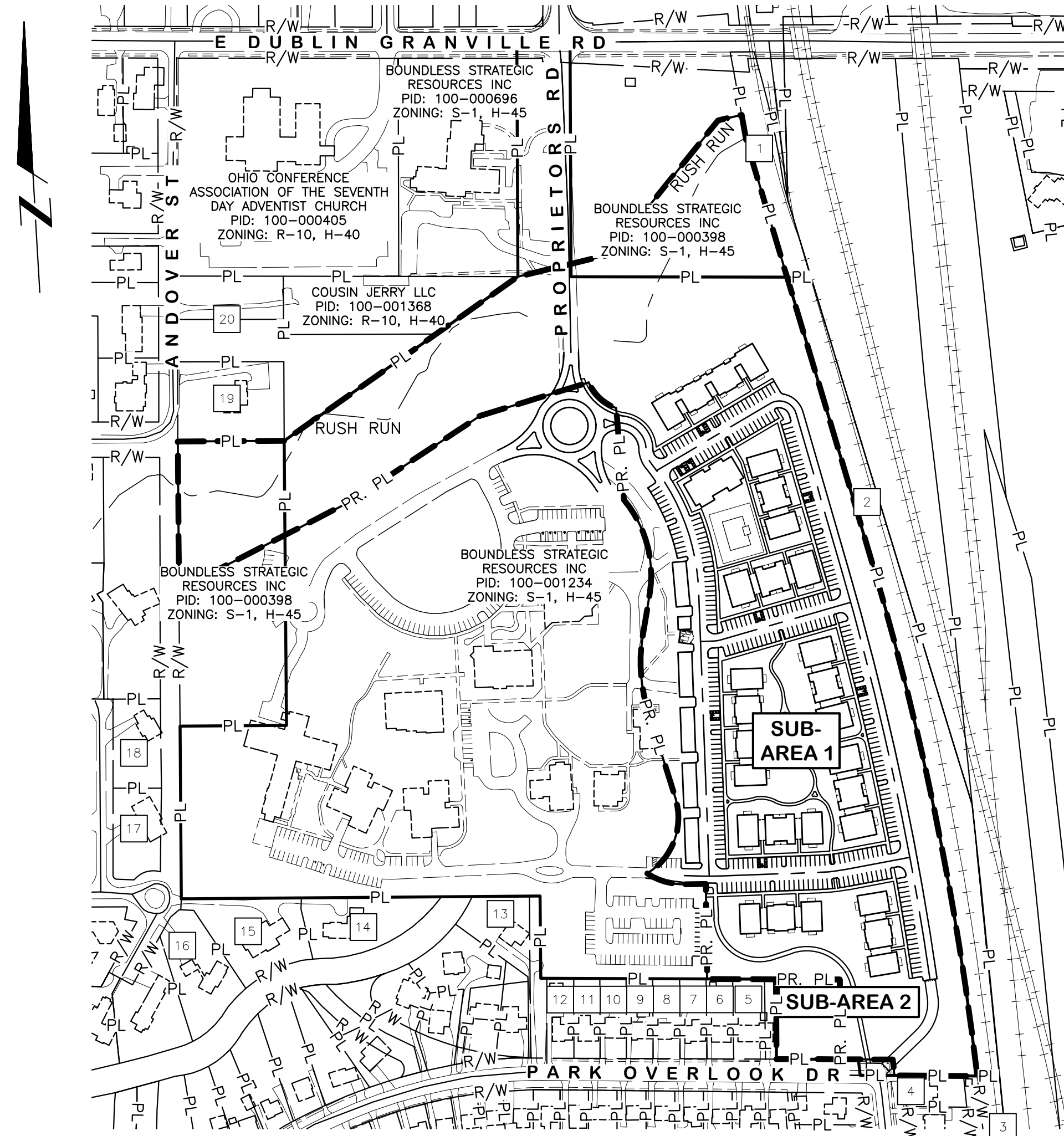
LOCATION MAP
NOT TO SCALE

| SITE DATA TABLE | | |
|--------------------------------|----------|------|
| DESCRIPTION | QUANTITY | UNIT |
| TOTAL SITE AREA (PRIVATE) | 19.89 | AC |
| TOTAL DISTURBED AREA | 11.22 | AC |
| PRE-DEVELOPED IMPERVIOUS AREA | 3.19 | AC |
| POST-DEVELOPED IMPERVIOUS AREA | 6.95 | AC |

| GENERAL ZONING INFORMATION | |
|---|---------------------------|
| MULTI-FAMILY (SUB-AREA 1) | |
| SITE ADDRESS | 445 E DUBLIN GRANVILLE RD |
| PARCEL NUMBER(S) | 100-001234 & 100-000398 |
| EXISTING ZONING CLASSIFICATION/DISTRICT | S-1 |
| PROPOSED USE | MULTI-FAMILY RESIDENTIAL |
| HEIGHT DISTRICT | H-45 |
| TOTAL SITE AREA (ACRES) | 19.89 |
| FLOOD INSURANCE RATE MAP NUMBER (FIRM) | 39049C0159K |
| MOST RECENT EFFECTIVE DATE OF FIRM | 06/17/2008 |
| BASE FLOOD ELEVATION (BFE) | N/A |
| SINGLE FAMILY (SUB-AREA 2) | |
| NUMBER OF LOTS | 2 |
| TOTAL AREA (ACRES) | 0.41 |
| LOT FRONTAGE | 60' |
| FRONT SETBACK | 25' |
| REAR SETBACK | 25' |
| SIDE SETBACK | 6' |

| GENERAL PROJECT INFORMATION | |
|---|---------------|
| MULTI-FAMILY (SUB-AREA 1) | |
| MAXIMUM BUILDING HEIGHT | 45' |
| PROPOSED BUILDING HEIGHT | 41'-3" |
| NUMBER OF DWELLING UNITS (RESIDENTIAL ONLY) | 246 |
| DENSITY | 12.4 UNITS/AC |
| TOTAL PROPOSED PARKING | 355 |

- 1 OHIO RAILWAY MUSEUM INC
PID: 100-000529
- 2 OHIO RAILWAY MUSEUM INC
PID: 100-001239
- 3 OHIO RAILWAY MUSEUM INC
PID: 100-001998
- 4 MILLER KAREN S
PID: 100-006074
ZONING: R-10, H-40
- 5 MILLER KAREN S
PID: 100-002108
ZONING: R-10, H-40
- 6 SHUMWAY MARTIN R
PID: 100-001478
ZONING: R-10, H-40
- 7 SHUMWAY MARTIN R
PID: 100-001479
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- 8 WARREN MARK D
PID: 100-001399
ZONING: R-10, H-40
- 9 BARTELT WILLIAM F III
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ZONING: R-10, H-40
- 10 DEWINE AMANDA
PID: 100-001476
ZONING: R-10, H-40
- 11 SUTHERLAND LAURIE A
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- 17 CHANG LIYAN DAVID
PID: 100-002272
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- 18 DOTSON JEFFREY
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- 19 ARNETT CHRISTOPHER ALLEN
PID: 100-001079
ZONING: R-10, H-40
- 20 COUSIN JERRY LLC
PID: 100-000780
ZONING: R-10, H-40



SHEET INDEX

| | |
|--------------------------------|---|
| TITLE | 1 |
| EXISTING CONDITIONS | 2 |
| PRELIMINARY ZONING PLAN | 3 |
| SITE LAYOUT PLAN | 4 |
| SITE UTILITY PLAN | 5 |
| PRELIMINARY GRADING PLAN | 6 |

DEVELOPER INFORMATION:

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COLUMBUS, OHIO 43125
CONTACT: JOE GAVIN
PHONE: (614) 581-3945
EMAIL: jgavin@elford.com

OWNER INFORMATION:

ELFORD DEVELOPMENT
1200 DUBLIN ROAD
COLUMBUS, OHIO 43215
CONTACT: MIKE FITZPATRICK
PH: (614) 488-0000
EMAIL: mfitzpatrick@elford.com

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ARCHALL ARCHITECTS
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COLUMBUS, OHIO, 43201
CONTACT: BRAD PARISH
PHONE: (614) 469-7500
EMAIL: bparish@archall.com

CIVIL ENGINEER INFORMATION:

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2130 QUARRY TRAILS DRIVE, 2ND FLOOR
COLUMBUS, OHIO 43228
CONTACT: JUSTIN A. RAY, P.E.
PHONE: (614) 299-2999
FAX: (614) 299-2992
EMAIL: jray@epferris.com

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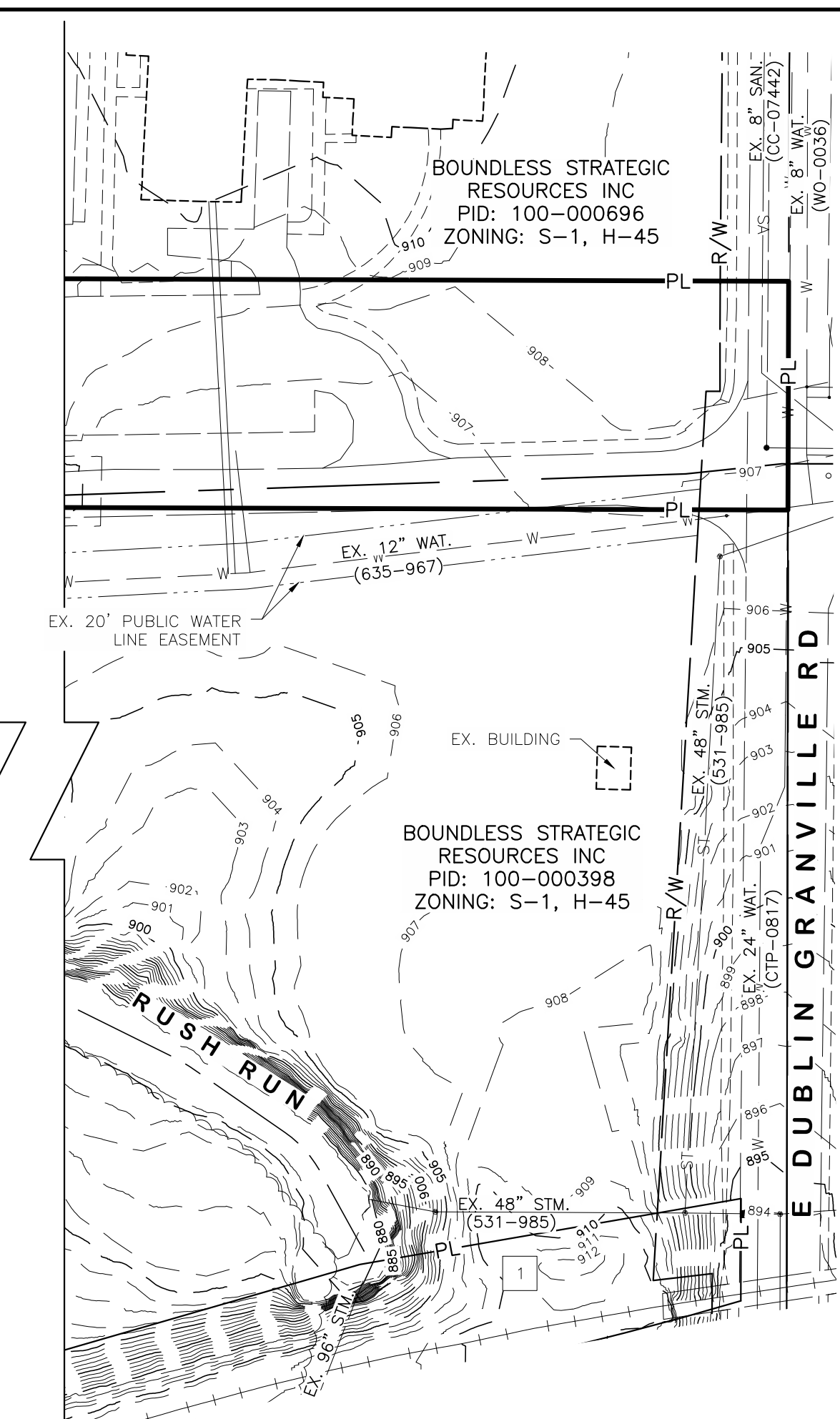
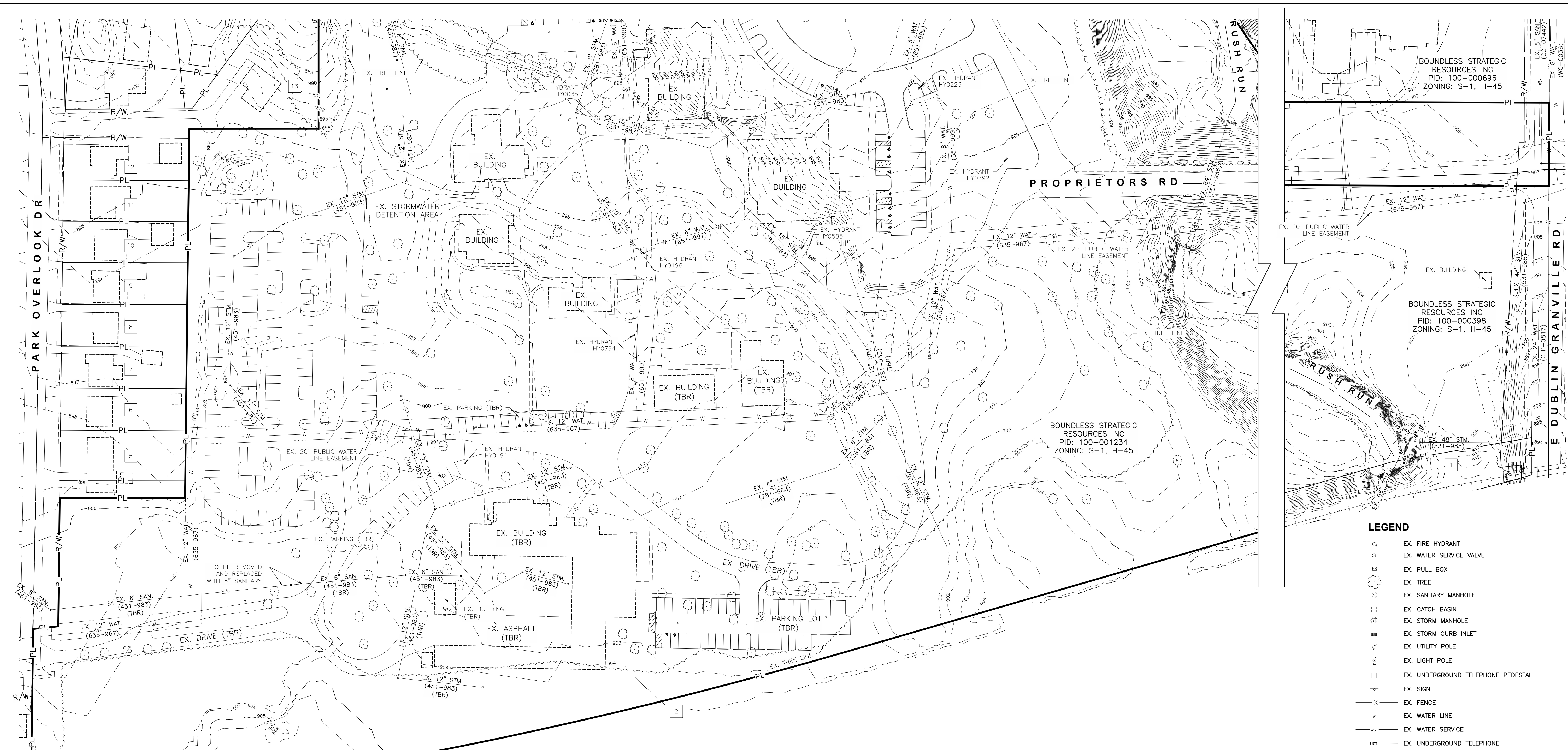
2130 QUARRY TRAILS DR,
2ND FLOOR
COLUMBUS, OHIO 43228
(614) 299-2999
(614) 299-2992 (Fax)
www.EPFERRIS.com

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CONSTRUCTION

BY _____ REGISTERED ENGINEER DATE _____

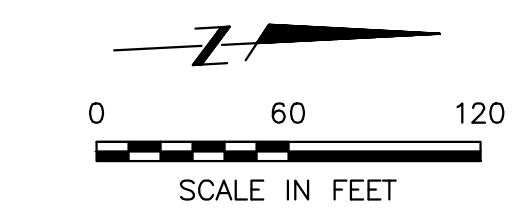


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- LEGEND**
- ⊙ EX. FIRE HYDRANT
 - ⊕ EX. WATER SERVICE VALVE
 - ⊞ EX. PULL BOX
 - ⊗ EX. TREE
 - ⊙ EX. SANITARY MANHOLE
 - ⊞ EX. CATCH BASIN
 - ⊞ EX. STORM MANHOLE
 - ⊞ EX. STORM CURB INLET
 - ⊞ EX. UTILITY POLE
 - ⊞ EX. LIGHT POLE
 - ⊞ EX. UNDERGROUND TELEPHONE PEDESTAL
 - ⊞ EX. SIGN
 - X — EX. FENCE
 - W — EX. WATER LINE
 - WS — EX. WATER SERVICE
 - UOT — EX. UNDERGROUND TELEPHONE
 - G — EX. GAS
 - ST — EX. STORM
 - SA — EX. SANITARY
 - UOE — EX. UNDERGROUND ELECTRIC
 - OME — EX. OVERHEAD ELECTRIC
 - R/W — EX. RIGHT OF WAY
 - PL — EX. PROPERTY LINE
 - PL — SUBJECT PROPERTY LINE
 - 996 — EX. MINOR CONTOUR ELEVATION
 - 995 — EX. MAJOR CONTOUR ELEVATION
 - TBR TO BE REMOVED

- | | |
|--|--|
| <p>1 OHIO RAILWAY MUSEUM INC PID: 100-000529</p> <p>2 OHIO RAILWAY MUSEUM INC PID: 100-001239</p> <p>3 OHIO RAILWAY MUSEUM INC PID: 100-001998</p> <p>4 MILLER KAREN S PID: 100-006074 ZONING: R-10, H-40</p> <p>5 MILLER KAREN S PID: 100-002108 ZONING: R-10, H-40</p> <p>6 SHUMWAY MARTIN R PID: 100-001478 ZONING: R-10, H-40</p> <p>7 SHUMWAY MARTIN R PID: 100-001479 ZONING: R-10, H-40</p> | <p>8 WARREN MARK D PID: 100-001399 ZONING: R-10, H-40</p> <p>9 BARTELT WILLIAM F III PID: 100-001485 ZONING: R-10, H-40</p> <p>10 DEWINE AMANDA PID: 100-001476 ZONING: R-10, H-40</p> <p>11 SUTHERLAND LAURIE A PID: 100-001477 ZONING: R-10, H-40</p> <p>12 SMULLEN JAKE PID: 100-001480 ZONING: R-10, H-40</p> <p>13 HOSTER BARRET B PID: 100-001348 ZONING: R-10, H-40</p> |
|--|--|



| REVISIONS | BY | DATE |
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E. P. FERRIS
AND
ASSOCIATES

Consulting Civil Engineers and Surveyors

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CITY OF WORTHINGTON, OHIO
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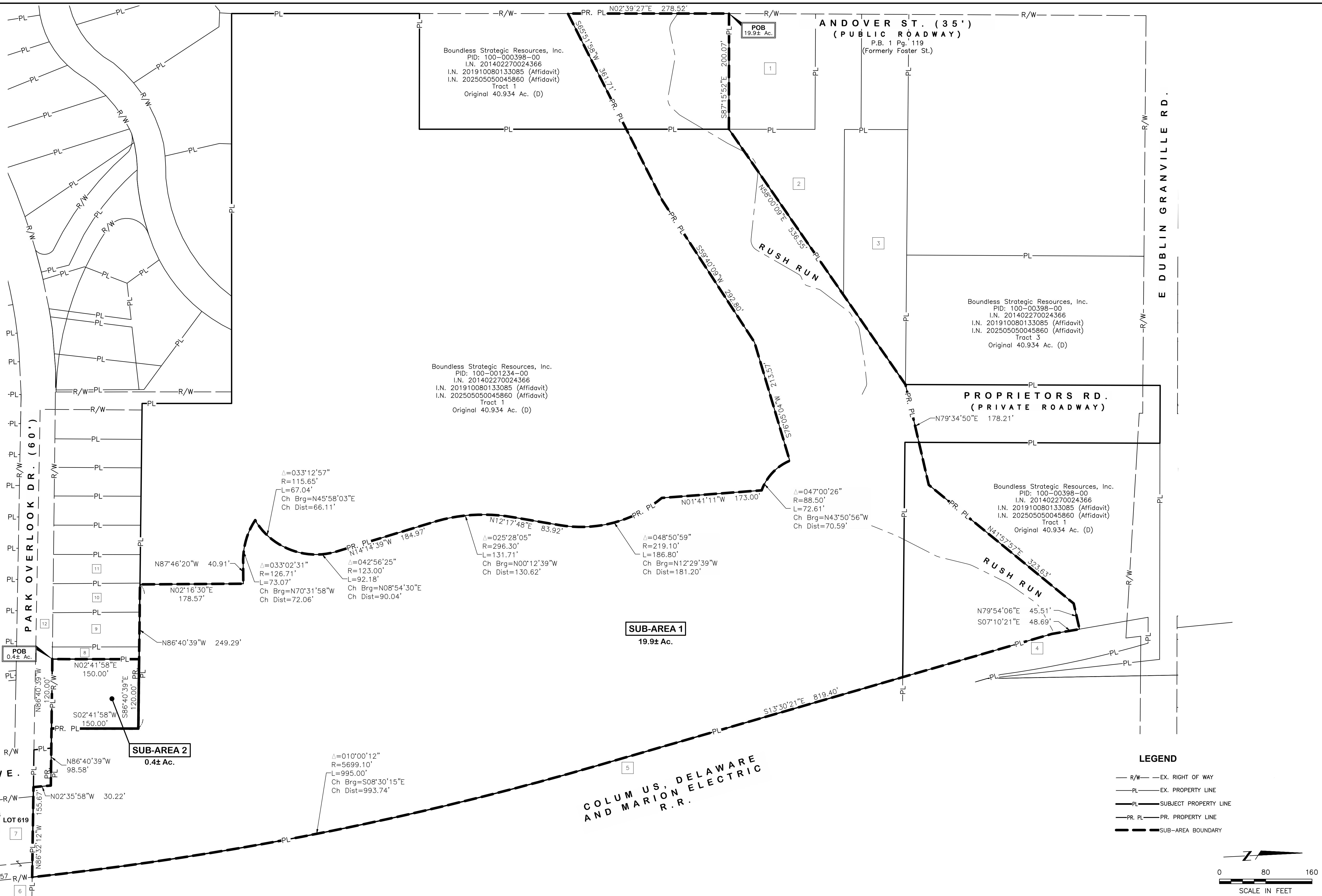
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| DRAWN BY: | SKD |
| CHECKED BY: | JAR |
| APPROVED BY: | CLP |
| DATE: | 1/8/2026 |

EXISTING CONDITIONS

| | |
|--------------------|---------|
| SCALE: 1" = 60' | |
| SHEET NO. 2 | OF 6 |

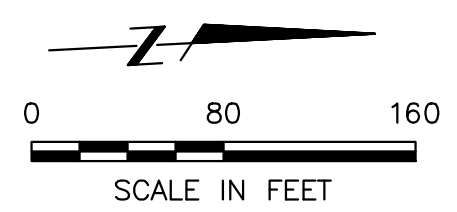
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- 2 Cousin Jerry LLC
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Original 2.323 Ac. (D)
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I.N. 202505150050528
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2.009 Ac. (D)
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- 8 KAREN S. MILLER AND SHAWN E. MILLER
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PID: 100-002108-00
I.N. 200103090048575
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- 10 Martin R. Shumway
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I.N. 201607210093788
- 11 Martin R. Shumway
PID: 100-001478-00
I.N. 201607210093788
- 12 The Board of County Commissioners of Franklin County, Ohio
D.B. 1688 Pg. 284
0.402 Ac. (D)



LEGEND

- R/W — EX. RIGHT OF WAY
- PL — EX. PROPERTY LINE
- PL — SUBJECT PROPERTY LINE
- PR. PL — PR. PROPERTY LINE
- — SUB-AREA BOUNDARY



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| | | |
| | | |

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CITY OF WORTHINGTON, OHIO

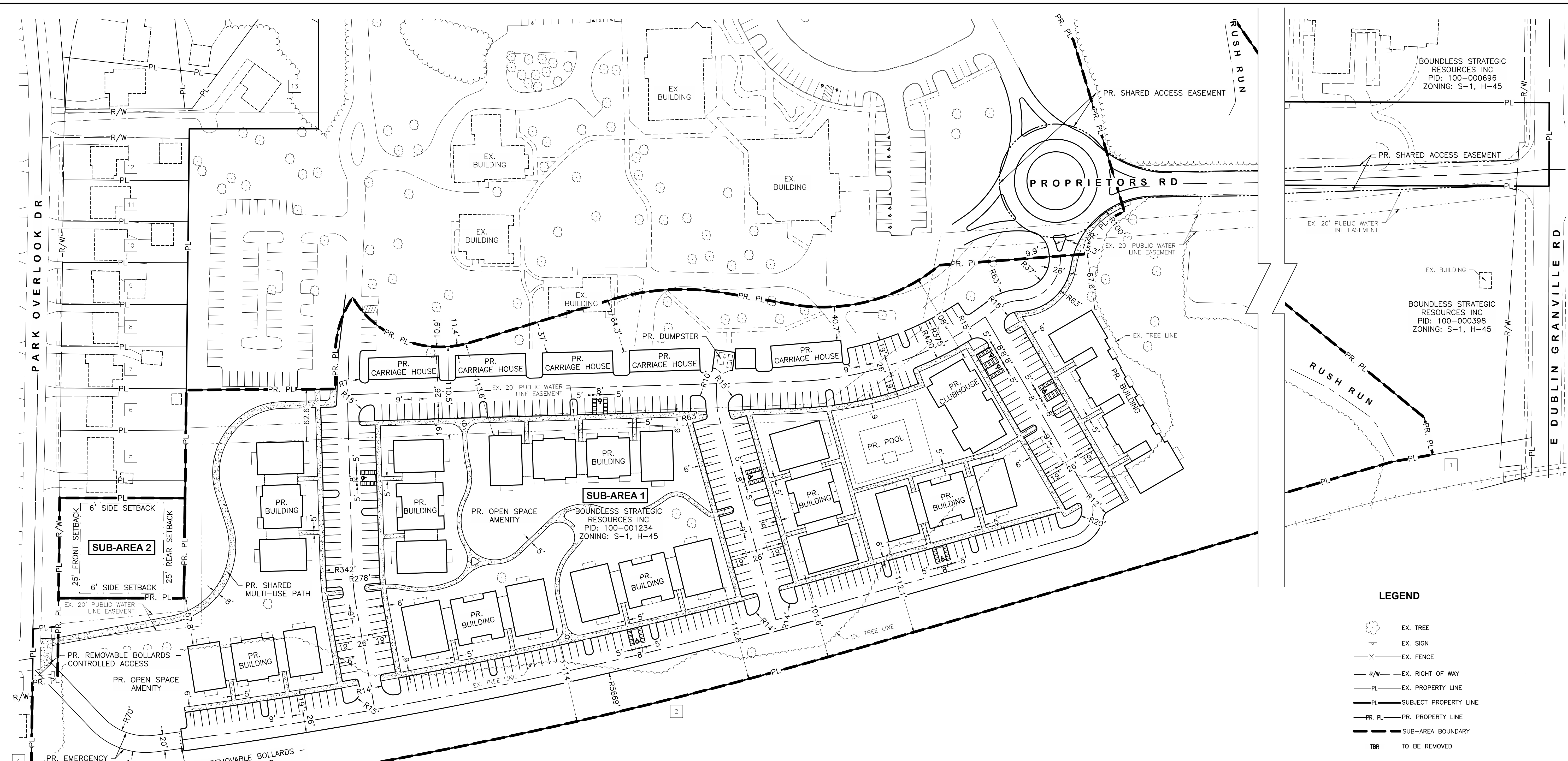
BOUNDLESS

ELFORD DEVELOPMENT

| | |
|--------------|----------|
| JOB NO.: | 1050.030 |
| DESIGNED BY: | SKD |
| DRAWN BY: | SKD |
| CHECKED BY: | JAR |
| APPROVED BY: | CLP |
| DATE: | 1/8/2026 |

| | |
|-----------|----|
| SCALE: | |
| 1" = 80' | |
| SHEET NO. | OF |
| 3 | 6 |

M:\1050030_Boundless\DWG\Production Drawings\1050030_Prelim\Site Layout.dwg --Site Layout Plan PLOTTED BY JAR ON 01/9/2026 10:17



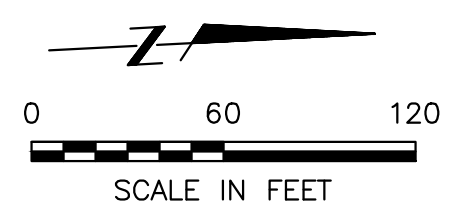
- | | |
|---|--|
| 1 OHIO RAILWAY MUSEUM INC PID: 100-000529 | 8 WARREN MARK D PID: 100-001399 ZONING: R-10, H-40 |
| 2 OHIO RAILWAY MUSEUM INC PID: 100-001239 | 9 BARTELT WILLIAM F III PID: 100-001485 ZONING: R-10, H-40 |
| 3 OHIO RAILWAY MUSEUM INC PID: 100-001998 | 10 DEWINE AMANDA PID: 100-001476 ZONING: R-10, H-40 |
| 4 MILLER KAREN S PID: 100-006074 ZONING: R-10, H-40 | 11 SUTHERLAND LAURIE A PID: 100-001477 ZONING: R-10, H-40 |
| 5 MILLER KAREN S PID: 100-002108 ZONING: R-10, H-40 | 12 SMULLEN JAKE PID: 100-001480 ZONING: R-10, H-40 |
| 6 SHUMWAY MARTIN R PID: 100-001478 ZONING: R-10, H-40 | 13 HOSTER BARRET B PID: 100-001348 ZONING: R-10, H-40 |
| 7 SHUMWAY MARTIN R PID: 100-001479 ZONING: R-10, H-40 | |

LEGEND

- EX. TREE
- EX. SIGN
- EX. FENCE
- R/W EX. RIGHT OF WAY
- PL EX. PROPERTY LINE
- PL SUBJECT PROPERTY LINE
- PR. PL PR. PROPERTY LINE
- SUB-AREA BOUNDARY
- TBR TO BE REMOVED
- PR. CONCRETE WALK/DRIVE

NOTES:
ALL RADII ARE 4' UNLESS OTHERWISE NOTED. ALL RADIUS DIMENSIONS GIVEN ARE MEASURED ALONG FACE OF CURB.

PHASING NOTE:
THERE WILL NOT BE ANY PHASES FOR THIS PROJECT AS EVERYTHING WILL BE BUILT AT ONCE.



| REVISIONS | BY | DATE |
|-----------|----|------|
| | | |
| | | |

E. P. FERRIS
AND
ASSOCIATES

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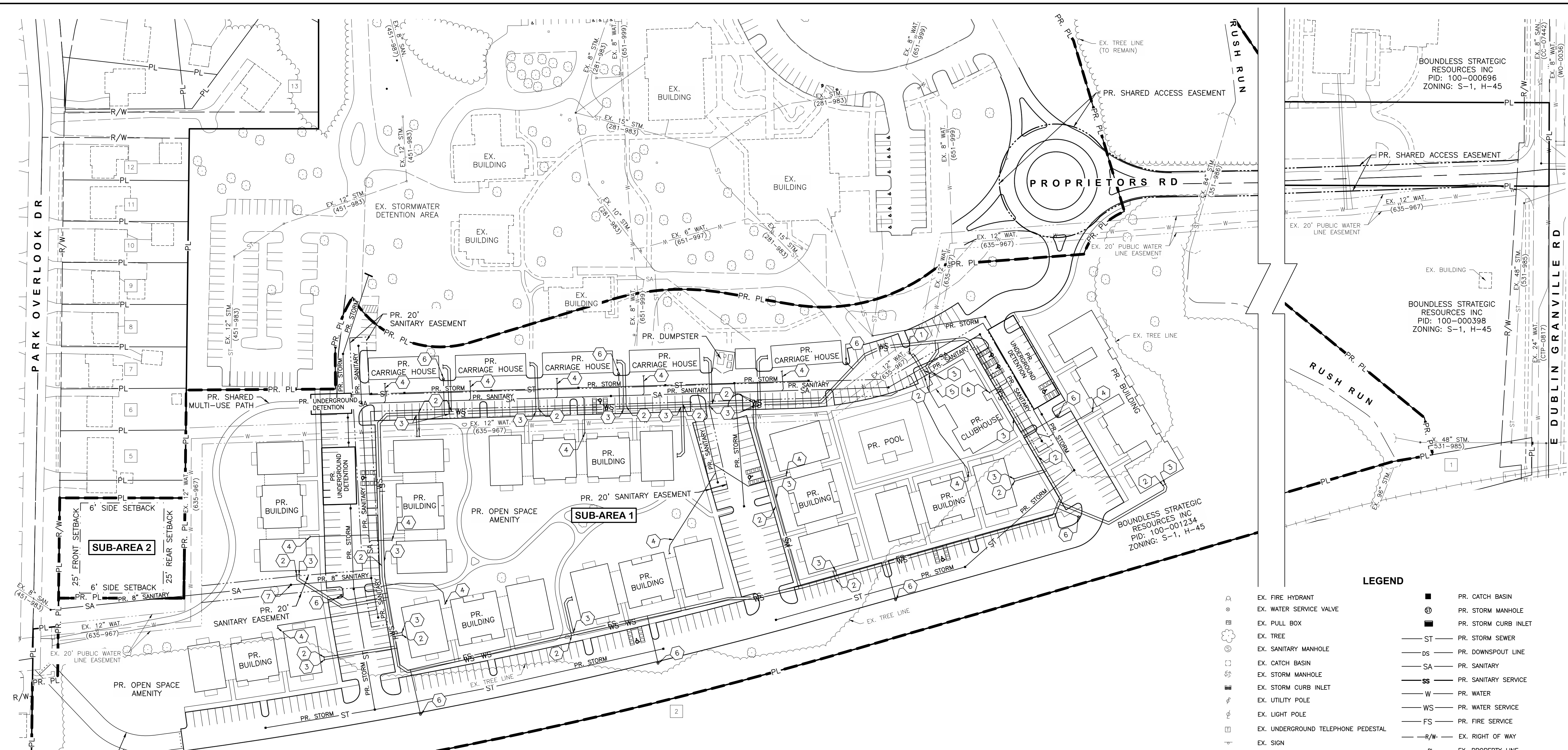
CITY OF WORTHINGTON, OHIO
BOUNDLESS
ELFORD DEVELOPMENT

| | |
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| JOB NO.: | 1050.030 |
| DESIGNED BY: | SKD |
| DRAWN BY: | SKD |
| CHECKED BY: | JAR |
| APPROVED BY: | CLP |
| DATE: | 1/9/2026 |

SITE LAYOUT PLAN

| | |
|--------------------|---------|
| SCALE: 1" = 60' | |
| SHEET NO. 4 | OF 6 |

M:\1050030_Boundless\DWG\Production Drawings\1050030_Preliminary\Utility Plan.dwg --Site Utility Plan PLOTTED BY:RAY ON 01/9/2026 10:17



- LEGEND**
- EX. FIRE HYDRANT
 - EX. WATER SERVICE VALVE
 - EX. PULL BOX
 - EX. TREE
 - EX. SANITARY MANHOLE
 - EX. CATCH BASIN
 - EX. STORM MANHOLE
 - EX. STORM CURB INLET
 - EX. UTILITY POLE
 - EX. LIGHT POLE
 - EX. UNDERGROUND TELEPHONE PEDESTAL
 - EX. SIGN
 - EX. FENCE
 - EX. WATER LINE
 - WS EX. WATER SERVICE
 - UGT EX. UNDERGROUND TELEPHONE
 - EX. GAS
 - ST EX. STORM
 - SA EX. SANITARY
 - USE EX. UNDERGROUND ELECTRIC
 - OHE EX. OVERHEAD ELECTRIC
 - PR. CATCH BASIN
 - PR. STORM MANHOLE
 - PR. STORM CURB INLET
 - ST PR. STORM SEWER
 - DS PR. DOWNSPOUT LINE
 - SA PR. SANITARY
 - SS PR. SANITARY SERVICE
 - W PR. WATER
 - WS PR. WATER SERVICE
 - FS PR. FIRE SERVICE
 - R/W EX. RIGHT OF WAY
 - PL EX. PROPERTY LINE
 - PL SUBJECT PROPERTY LINE
 - SUB-AREA BOUNDARY
 - PR. PL PR. PROPERTY LINE
 - TBR TO BE REMOVED
- CODED NOTES**
- 1 PR. WATER TAP
 - 2 PR. DOMESTIC WATER SERVICE
 - 3 PR. FIRE WATER SERVICE
 - 4 PR. SANITARY LATERAL
 - 5 PR. WATER METER ROOM
 - 6 PR. FIRE HYDRANT
 - 7 EX. INVERT +/- 9' FROM EX. GROUND

- 1 OHIO RAILWAY MUSEUM INC
PID: 100-000529
- 2 OHIO RAILWAY MUSEUM INC
PID: 100-001239
- 3 OHIO RAILWAY MUSEUM INC
PID: 100-001998
- 4 MILLER KAREN S
PID: 100-006074
ZONING: R-10, H-40
- 5 MILLER KAREN S
PID: 100-002108
ZONING: R-10, H-40
- 6 SHUMWAY MARTIN R
PID: 100-001478
ZONING: R-10, H-40
- 7 SHUMWAY MARTIN R
PID: 100-001479
ZONING: R-10, H-40
- 8 WARREN MARK D
PID: 100-001399
ZONING: R-10, H-40
- 9 BARTELT WILLIAM F III
PID: 100-001485
ZONING: R-10, H-40
- 10 DEWINE AMANDA
PID: 100-001476
ZONING: R-10, H-40
- 11 SUTHERLAND LAURIE A
PID: 100-001477
ZONING: R-10, H-40
- 12 SMULLEN JAKE
PID: 100-001480
ZONING: R-10, H-40
- 13 HOSTER BARRET B
PID: 100-001348
ZONING: R-10, H-40

| REVISIONS | BY | DATE |
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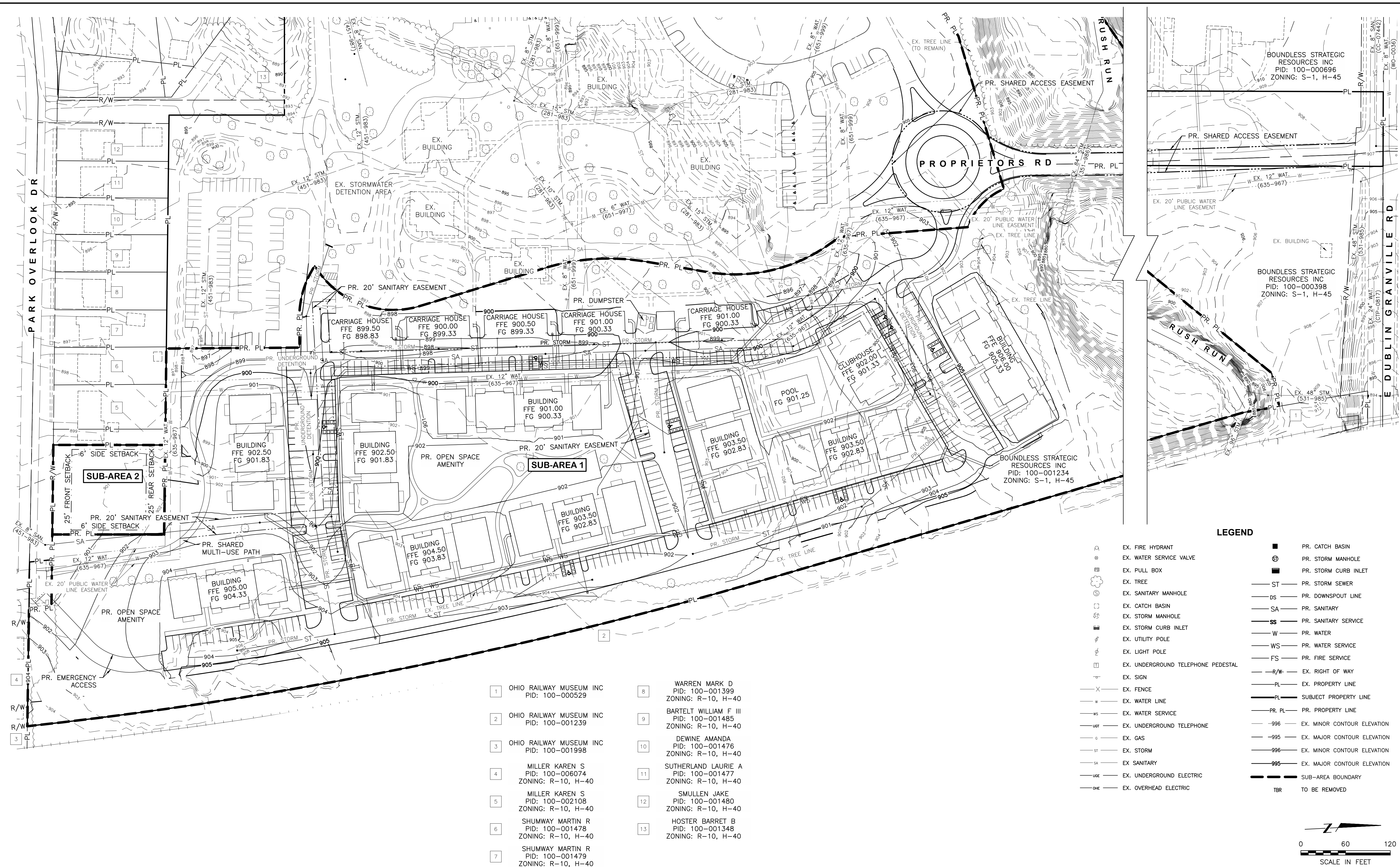
CITY OF WORTHINGTON, OHIO
BOUNDLESS
ELFORD DEVELOPMENT

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| DRAWN BY: | SKD |
| CHECKED BY: | JAR |
| APPROVED BY: | CLP |
| DATE: | 1/9/2026 |

SITE UTILITY PLAN

| | | | |
|-----------|----------|----|---|
| SCALE: | 1" = 60' | | |
| SHEET NO. | 5 | OF | 6 |

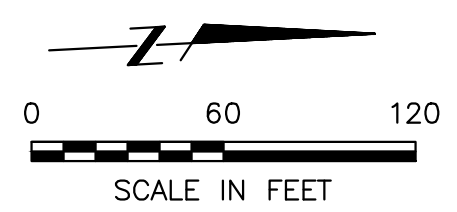
M:\1050030_Boundless\DWG\Production Drawings\1050030_Preliminary Grading Plan.dwg ~Preliminary Grading Plan PLOTTED BY: JAR ON 01/9/2026 10:17



LEGEND

| | | | |
|--|------------------------------------|--|-----------------------------|
| | EX. FIRE HYDRANT | | PR. CATCH BASIN |
| | EX. WATER SERVICE VALVE | | PR. STORM MANHOLE |
| | EX. PULL BOX | | PR. STORM CURB INLET |
| | EX. TREE | | PR. STORM SEWER |
| | EX. SANITARY MANHOLE | | PR. DOWNSPOUT LINE |
| | EX. CATCH BASIN | | PR. SANITARY |
| | EX. STORM MANHOLE | | PR. STORM SANITARY SERVICE |
| | EX. STORM CURB INLET | | PR. WATER |
| | EX. UTILITY POLE | | PR. WATER SERVICE |
| | EX. LIGHT POLE | | PR. FIRE SERVICE |
| | EX. UNDERGROUND TELEPHONE PEDESTAL | | PR. EX. RIGHT OF WAY |
| | EX. SIGN | | PR. EX. PROPERTY LINE |
| | EX. FENCE | | PR. SUBJECT PROPERTY LINE |
| | EX. WATER LINE | | PR. PROPERTY LINE |
| | EX. WATER SERVICE | | EX. MINOR CONTOUR ELEVATION |
| | EX. UNDERGROUND TELEPHONE | | EX. MAJOR CONTOUR ELEVATION |
| | EX. GAS | | EX. MINOR CONTOUR ELEVATION |
| | EX. STORM | | EX. MAJOR CONTOUR ELEVATION |
| | EX. SANITARY | | SUB-AREA BOUNDARY |
| | EX. UNDERGROUND ELECTRIC | | TO BE REMOVED |
| | EX. OVERHEAD ELECTRIC | | |

- | | |
|---|--|
| 1 OHIO RAILWAY MUSEUM INC PID: 100-000529 | 8 WARREN MARK D PID: 100-001399 ZONING: R-10, H-40 |
| 2 OHIO RAILWAY MUSEUM INC PID: 100-001239 | 9 BARTELT WILLIAM F III PID: 100-001485 ZONING: R-10, H-40 |
| 3 OHIO RAILWAY MUSEUM INC PID: 100-001998 | 10 DEWINE AMANDA PID: 100-001476 ZONING: R-10, H-40 |
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| 5 MILLER KAREN S PID: 100-002108 ZONING: R-10, H-40 | 12 SMULLEN JAKE PID: 100-001480 ZONING: R-10, H-40 |
| 6 SHUMWAY MARTIN R PID: 100-001478 ZONING: R-10, H-40 | 13 HOSTER BARRET B PID: 100-001348 ZONING: R-10, H-40 |
| 7 SHUMWAY MARTIN R PID: 100-001479 ZONING: R-10, H-40 | |



| REVISIONS | BY | DATE |
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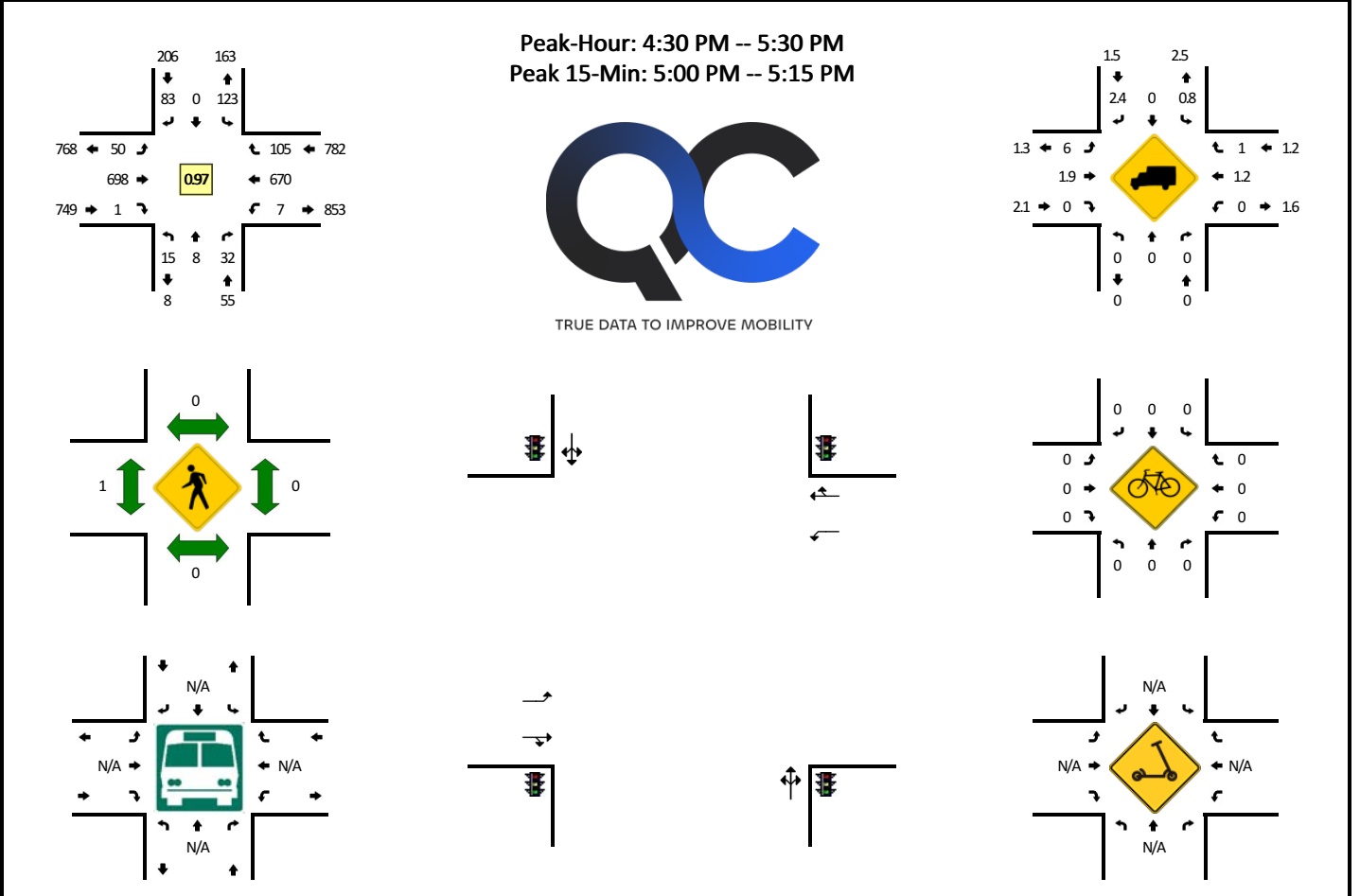
| | |
|-----------|----|
| SCALE: | |
| 1" = 60' | |
| SHEET NO. | OF |
| 6 | 6 |

Appendix B

Counts & Growth Rates

LOCATION: Proprietors Rd -- E Dublin Granville Rd
CITY/STATE: Worthington, OH

QC JOB #: 17358403
DATE: Wed, Dec 17 2025



| 15-Min Count Period Beginning At | Proprietors Rd (Northbound) | | | | Proprietors Rd (Southbound) | | | | E Dublin Granville Rd (Eastbound) | | | | E Dublin Granville Rd (Westbound) | | | | Total | Hourly Totals |
|----------------------------------|-----------------------------|------|-------|---|-----------------------------|------|-------|---|-----------------------------------|------|-------|---|-----------------------------------|------|-------|---|-------|---------------|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 12:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 15 | 0 | 0 | 0 | 13 | 1 | 0 | 30 | |
| 12:15 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 10 | 0 | 0 | 0 | 6 | 2 | 0 | 20 | |
| 12:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 6 | 5 | 0 | 15 | |
| 12:45 AM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 8 | 3 | 0 | 20 | 85 |
| 1:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 0 | 0 | 1 | 5 | 0 | 0 | 12 | 67 |
| 1:15 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 3 | 1 | 0 | 14 | 61 |
| 1:30 AM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 10 | 0 | 0 | 1 | 7 | 1 | 0 | 22 | 68 |
| 1:45 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 4 | 1 | 0 | 15 | 63 |
| 2:00 AM | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 4 | 0 | 0 | 1 | 6 | 1 | 0 | 16 | 67 |
| 2:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 8 | 61 |
| 2:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 8 | 0 | 0 | 11 | 50 |
| 2:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 7 | 42 |
| 3:00 AM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 9 | 1 | 0 | 17 | 43 |
| 3:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 9 | 0 | 0 | 0 | 9 | 0 | 0 | 21 | 56 |
| 3:30 AM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 7 | 1 | 0 | 16 | 61 |
| 3:45 AM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 5 | 1 | 0 | 11 | 65 |
| 4:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 6 | 0 | 0 | 13 | 61 |
| 4:15 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 8 | 1 | 0 | 19 | 59 |
| 4:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 11 | 0 | 0 | 0 | 10 | 0 | 0 | 23 | 66 |
| 4:45 AM | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 2 | 12 | 0 | 0 | 0 | 13 | 1 | 0 | 32 | 87 |
| 5:00 AM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 10 | 0 | 0 | 0 | 17 | 2 | 0 | 33 | 107 |
| 5:15 AM | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 1 | 9 | 0 | 0 | 0 | 20 | 5 | 0 | 40 | 128 |
| 5:30 AM | 0 | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 2 | 14 | 1 | 0 | 0 | 29 | 1 | 0 | 53 | 158 |
| 5:45 AM | 0 | 1 | 0 | 0 | 3 | 0 | 2 | 0 | 2 | 40 | 0 | 0 | 0 | 30 | 12 | 0 | 90 | 216 |
| 6:00 AM | 0 | 0 | 0 | 0 | 11 | 0 | 2 | 0 | 2 | 21 | 0 | 0 | 0 | 43 | 3 | 0 | 82 | 265 |
| 6:15 AM | 0 | 0 | 0 | 0 | 11 | 0 | 4 | 0 | 5 | 26 | 1 | 0 | 1 | 63 | 5 | 0 | 116 | 341 |
| 6:30 AM | 0 | 0 | 1 | 0 | 18 | 0 | 3 | 0 | 6 | 56 | 2 | 0 | 0 | 65 | 18 | 0 | 169 | 457 |
| 6:45 AM | 0 | 0 | 0 | 0 | 11 | 0 | 6 | 0 | 19 | 54 | 0 | 0 | 3 | 91 | 27 | 0 | 211 | 578 |
| 7:00 AM | 0 | 0 | 1 | 0 | 30 | 0 | 9 | 0 | 7 | 86 | 1 | 0 | 1 | 103 | 20 | 0 | 258 | 754 |
| 7:15 AM | 0 | 0 | 0 | 0 | 20 | 0 | 10 | 0 | 10 | 101 | 1 | 0 | 4 | 98 | 26 | 0 | 270 | 908 |
| 7:30 AM | 0 | 0 | 1 | 0 | 31 | 2 | 16 | 0 | 15 | 104 | 3 | 0 | 11 | 126 | 19 | 0 | 328 | 1067 |
| 7:45 AM | 1 | 0 | 2 | 0 | 37 | 4 | 11 | 0 | 16 | 119 | 7 | 0 | 26 | 124 | 32 | 0 | 379 | 1235 |
| 8:00 AM | 2 | 0 | 10 | 0 | 28 | 3 | 11 | 0 | 8 | 110 | 11 | 0 | 31 | 109 | 33 | 0 | 356 | 1333 |
| 8:15 AM | 1 | 0 | 2 | 0 | 13 | 0 | 16 | 0 | 17 | 123 | 4 | 0 | 6 | 101 | 21 | 0 | 304 | 1367 |
| 8:30 AM | 0 | 0 | 7 | 0 | 29 | 0 | 18 | 0 | 17 | 120 | 3 | 0 | 6 | 133 | 31 | 0 | 364 | 1403 |
| 8:45 AM | 2 | 0 | 2 | 0 | 30 | 0 | 15 | 0 | 25 | 128 | 7 | 0 | 14 | 103 | 32 | 0 | 358 | 1382 |
| 9:00 AM | 3 | 2 | 24 | 0 | 26 | 0 | 11 | 0 | 19 | 117 | 6 | 0 | 15 | 111 | 22 | 0 | 356 | 1382 |
| 9:15 AM | 1 | 1 | 11 | 0 | 22 | 1 | 10 | 0 | 7 | 96 | 0 | 0 | 8 | 88 | 18 | 0 | 263 | 1341 |

| 15-Min Count Period Beginning At | Proprietors Rd (Northbound) | | | | Proprietors Rd (Southbound) | | | | E Dublin Granville Rd (Eastbound) | | | | E Dublin Granville Rd (Westbound) | | | | Total | Hourly Totals |
|----------------------------------|-----------------------------|------|-------|---|-----------------------------|------|-------|---|-----------------------------------|------|-------|---|-----------------------------------|------|-------|---|-------|---------------|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 9:30 AM | 2 | 0 | 4 | 0 | 27 | 0 | 15 | 0 | 18 | 105 | 7 | 0 | 5 | 109 | 16 | 0 | 308 | 1285 |
| 9:45 AM | 1 | 1 | 1 | 0 | 46 | 0 | 14 | 0 | 10 | 78 | 2 | 0 | 5 | 110 | 34 | 0 | 302 | 1229 |
| 10:00 AM | 1 | 0 | 9 | 0 | 16 | 0 | 15 | 0 | 11 | 90 | 0 | 0 | 3 | 88 | 17 | 0 | 250 | 1123 |
| 10:15 AM | 1 | 0 | 3 | 0 | 16 | 1 | 13 | 0 | 20 | 85 | 4 | 0 | 0 | 100 | 11 | 0 | 254 | 1114 |
| 10:30 AM | 1 | 0 | 3 | 0 | 14 | 1 | 14 | 0 | 13 | 95 | 0 | 0 | 3 | 105 | 19 | 0 | 268 | 1074 |
| 10:45 AM | 1 | 0 | 2 | 0 | 23 | 0 | 15 | 0 | 9 | 90 | 3 | 0 | 3 | 101 | 14 | 0 | 261 | 1033 |
| 11:00 AM | 0 | 1 | 5 | 0 | 16 | 1 | 10 | 0 | 14 | 94 | 1 | 0 | 1 | 116 | 20 | 0 | 279 | 1062 |
| 11:15 AM | 1 | 0 | 2 | 0 | 18 | 1 | 20 | 0 | 12 | 101 | 3 | 0 | 3 | 105 | 25 | 0 | 291 | 1099 |
| 11:30 AM | 5 | 0 | 4 | 0 | 20 | 0 | 12 | 0 | 4 | 96 | 3 | 0 | 2 | 117 | 16 | 0 | 279 | 1110 |
| 11:45 AM | 1 | 0 | 4 | 0 | 21 | 0 | 18 | 0 | 15 | 102 | 3 | 0 | 7 | 137 | 23 | 0 | 331 | 1180 |
| 12:00 PM | 1 | 0 | 4 | 0 | 20 | 0 | 15 | 0 | 15 | 114 | 4 | 0 | 6 | 135 | 22 | 0 | 336 | 1237 |
| 12:15 PM | 4 | 3 | 4 | 0 | 21 | 0 | 12 | 0 | 7 | 129 | 4 | 0 | 2 | 109 | 20 | 0 | 315 | 1261 |
| 12:30 PM | 4 | 1 | 7 | 0 | 19 | 1 | 20 | 0 | 10 | 116 | 5 | 0 | 4 | 117 | 12 | 0 | 316 | 1298 |
| 12:45 PM | 1 | 0 | 7 | 0 | 20 | 0 | 16 | 0 | 18 | 136 | 3 | 0 | 5 | 110 | 25 | 0 | 341 | 1308 |
| 1:00 PM | 0 | 2 | 2 | 0 | 29 | 3 | 15 | 0 | 16 | 138 | 2 | 0 | 4 | 119 | 11 | 0 | 341 | 1313 |
| 1:15 PM | 2 | 0 | 2 | 0 | 18 | 0 | 13 | 0 | 18 | 129 | 4 | 0 | 4 | 104 | 23 | 0 | 317 | 1315 |
| 1:30 PM | 1 | 0 | 3 | 0 | 20 | 0 | 11 | 0 | 19 | 109 | 4 | 0 | 5 | 104 | 16 | 1 | 293 | 1292 |
| 1:45 PM | 0 | 1 | 4 | 0 | 11 | 0 | 14 | 0 | 16 | 125 | 0 | 0 | 7 | 135 | 17 | 0 | 330 | 1281 |
| 2:00 PM | 3 | 1 | 3 | 0 | 16 | 0 | 14 | 0 | 13 | 116 | 1 | 0 | 1 | 126 | 22 | 0 | 316 | 1256 |
| 2:15 PM | 3 | 0 | 3 | 0 | 24 | 0 | 17 | 0 | 12 | 144 | 3 | 0 | 4 | 124 | 23 | 0 | 357 | 1296 |
| 2:30 PM | 4 | 0 | 7 | 0 | 28 | 0 | 21 | 0 | 7 | 119 | 5 | 0 | 8 | 162 | 24 | 0 | 385 | 1388 |
| 2:45 PM | 2 | 1 | 11 | 0 | 31 | 3 | 13 | 0 | 9 | 130 | 2 | 0 | 16 | 111 | 27 | 0 | 356 | 1414 |
| 3:00 PM | 10 | 0 | 26 | 0 | 37 | 0 | 21 | 0 | 9 | 159 | 3 | 0 | 15 | 100 | 41 | 0 | 421 | 1519 |
| 3:15 PM | 2 | 1 | 11 | 0 | 27 | 0 | 12 | 0 | 13 | 160 | 2 | 0 | 7 | 141 | 24 | 0 | 400 | 1562 |
| 3:30 PM | 4 | 2 | 6 | 0 | 32 | 1 | 17 | 0 | 15 | 163 | 4 | 0 | 3 | 148 | 31 | 0 | 426 | 1603 |
| 3:45 PM | 8 | 1 | 2 | 0 | 22 | 1 | 18 | 0 | 19 | 174 | 0 | 0 | 4 | 163 | 18 | 0 | 430 | 1677 |
| 4:00 PM | 11 | 6 | 24 | 0 | 28 | 1 | 16 | 0 | 12 | 201 | 0 | 0 | 5 | 131 | 14 | 0 | 449 | 1705 |
| 4:15 PM | 4 | 1 | 7 | 0 | 19 | 0 | 12 | 0 | 19 | 195 | 5 | 0 | 4 | 142 | 21 | 0 | 429 | 1734 |
| 4:30 PM | 4 | 2 | 16 | 0 | 33 | 0 | 23 | 0 | 13 | 180 | 0 | 0 | 1 | 164 | 25 | 0 | 461 | 1769 |
| 4:45 PM | 5 | 1 | 4 | 0 | 18 | 0 | 13 | 0 | 16 | 182 | 0 | 0 | 2 | 155 | 25 | 0 | 421 | 1760 |
| 5:00 PM | 2 | 3 | 5 | 0 | 46 | 0 | 31 | 0 | 8 | 163 | 1 | 0 | 2 | 178 | 25 | 0 | 464 | 1775 |
| 5:15 PM | 4 | 2 | 7 | 0 | 26 | 0 | 16 | 0 | 13 | 173 | 0 | 0 | 2 | 173 | 30 | 0 | 446 | 1792 |
| 5:30 PM | 5 | 0 | 6 | 0 | 27 | 0 | 15 | 0 | 10 | 192 | 1 | 0 | 2 | 174 | 29 | 0 | 461 | 1792 |
| 5:45 PM | 0 | 0 | 6 | 0 | 24 | 0 | 20 | 0 | 9 | 160 | 1 | 0 | 3 | 144 | 22 | 0 | 389 | 1760 |
| 6:00 PM | 3 | 0 | 3 | 0 | 17 | 0 | 17 | 0 | 11 | 140 | 0 | 0 | 0 | 130 | 9 | 0 | 330 | 1626 |
| 6:15 PM | 0 | 0 | 1 | 0 | 22 | 0 | 13 | 0 | 14 | 143 | 0 | 0 | 0 | 118 | 24 | 0 | 335 | 1515 |
| 6:30 PM | 0 | 0 | 1 | 0 | 16 | 0 | 10 | 0 | 9 | 141 | 0 | 0 | 1 | 126 | 24 | 0 | 328 | 1382 |
| 6:45 PM | 0 | 0 | 1 | 0 | 14 | 0 | 10 | 0 | 10 | 102 | 1 | 0 | 0 | 102 | 19 | 0 | 259 | 1252 |
| 7:00 PM | 1 | 0 | 0 | 0 | 11 | 0 | 7 | 0 | 4 | 100 | 1 | 0 | 0 | 109 | 14 | 1 | 248 | 1170 |
| 7:15 PM | 0 | 0 | 0 | 0 | 16 | 0 | 6 | 0 | 6 | 89 | 0 | 0 | 0 | 80 | 15 | 0 | 212 | 1047 |
| 7:30 PM | 0 | 0 | 1 | 0 | 7 | 0 | 5 | 0 | 10 | 108 | 1 | 0 | 0 | 60 | 11 | 0 | 203 | 922 |
| 7:45 PM | 0 | 0 | 0 | 0 | 14 | 0 | 8 | 0 | 5 | 84 | 0 | 0 | 0 | 78 | 9 | 0 | 198 | 861 |
| 8:00 PM | 0 | 0 | 0 | 0 | 6 | 0 | 7 | 0 | 4 | 65 | 0 | 0 | 0 | 72 | 9 | 0 | 163 | 776 |
| 8:15 PM | 0 | 0 | 1 | 0 | 7 | 0 | 12 | 0 | 4 | 82 | 0 | 0 | 2 | 84 | 7 | 0 | 199 | 763 |
| 8:30 PM | 0 | 0 | 0 | 0 | 7 | 0 | 4 | 0 | 6 | 61 | 0 | 0 | 0 | 101 | 5 | 0 | 184 | 744 |
| 8:45 PM | 0 | 0 | 1 | 0 | 6 | 0 | 3 | 0 | 4 | 72 | 0 | 0 | 0 | 75 | 12 | 0 | 173 | 719 |
| 9:00 PM | 0 | 0 | 1 | 0 | 5 | 0 | 4 | 0 | 5 | 70 | 1 | 0 | 0 | 91 | 6 | 0 | 183 | 739 |
| 9:15 PM | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 5 | 64 | 0 | 0 | 0 | 70 | 5 | 0 | 150 | 690 |
| 9:30 PM | 0 | 0 | 1 | 0 | 4 | 0 | 4 | 0 | 7 | 63 | 0 | 0 | 1 | 57 | 9 | 0 | 146 | 652 |
| 9:45 PM | 0 | 1 | 2 | 0 | 3 | 0 | 2 | 0 | 5 | 49 | 0 | 0 | 0 | 53 | 4 | 0 | 119 | 598 |
| 10:00 PM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 5 | 56 | 0 | 0 | 0 | 46 | 6 | 0 | 115 | 530 |
| 10:15 PM | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 4 | 42 | 0 | 0 | 0 | 23 | 7 | 0 | 83 | 463 |
| 10:30 PM | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 2 | 34 | 0 | 0 | 0 | 25 | 6 | 0 | 72 | 389 |
| 10:45 PM | 0 | 0 | 0 | 0 | 6 | 0 | 3 | 0 | 1 | 24 | 0 | 0 | 0 | 23 | 8 | 0 | 65 | 335 |
| 11:00 PM | 0 | 0 | 1 | 0 | 3 | 0 | 2 | 0 | 2 | 45 | 0 | 0 | 0 | 28 | 5 | 0 | 86 | 306 |
| 11:15 PM | 0 | 0 | 0 | 0 | 6 | 0 | 2 | 0 | 1 | 26 | 0 | 0 | 0 | 29 | 2 | 0 | 66 | 289 |
| 11:30 PM | 0 | 0 | 0 | 0 | 6 | 0 | 2 | 0 | 1 | 21 | 0 | 0 | 0 | 35 | 5 | 0 | 70 | 287 |
| 11:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 24 | 0 | 0 | 0 | 33 | 5 | 0 | 65 | 287 |
| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total | |
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| All Vehicles | 8 | 12 | 20 | 0 | 184 | 0 | 124 | 0 | 32 | 652 | 4 | 0 | 8 | 712 | 100 | 0 | 1856 | |
| Heavy Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 8 | 0 | 0 | 24 | |
| Buses | | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 | |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | |
| Scoters | | | | | | | | | | | | | | | | | | |

Comments:

Re: Growth Rate Request

From Hwashik Jang <hjang@morpc.org>

Date Tue 1/27/2026 4:10 PM

To Vamsi Krishna <VKrishna@compassinf.com>

Cc Jacob Dunbar <JDunbar@compassinf.com>; John Gallagher <JGallagher@compassinf.com>; Nora Anderson <NAnderson@CompassInf.com>; Sai Bhavaraju <SBhavaraju@compassinf.com>; Raj Roy <rroy@morpc.org>; Traffic <traffic@morpc.org>

[EXTERNAL EMAIL]: DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe. If you have a concern, please reach out to the IT Department.

Vamsi,

We have completed processing growth rates for your study intersection.

Please use linear annual growth rates as summarized below.

| Location | Linear Annual Growth Rate |
|--|----------------------------------|
| E Dublin Granville Rd e/o Proprietors Rd | 0.40% |
| Proprietors Rd n/o E Dublin Granville Rd | 1.00% |
| E Dublin Granville Rd w/o Proprietors Rd | 0.40% |
| Proprietors Rd s/o E Dublin Granville Rd | 0.90% |

Note: The above rate was derived based on planning level analysis by using MORPC's regional travel demand model.

If you have any questions, please let me know.

Thanks,

HWASHIK JANG

Senior Planner, Data & Mapping | Mid-Ohio Regional Planning Commission

T: 614.233.4145

111 Liberty Street, Suite 100 | Columbus, OH 43215



Appendix C

Trip Generation

Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

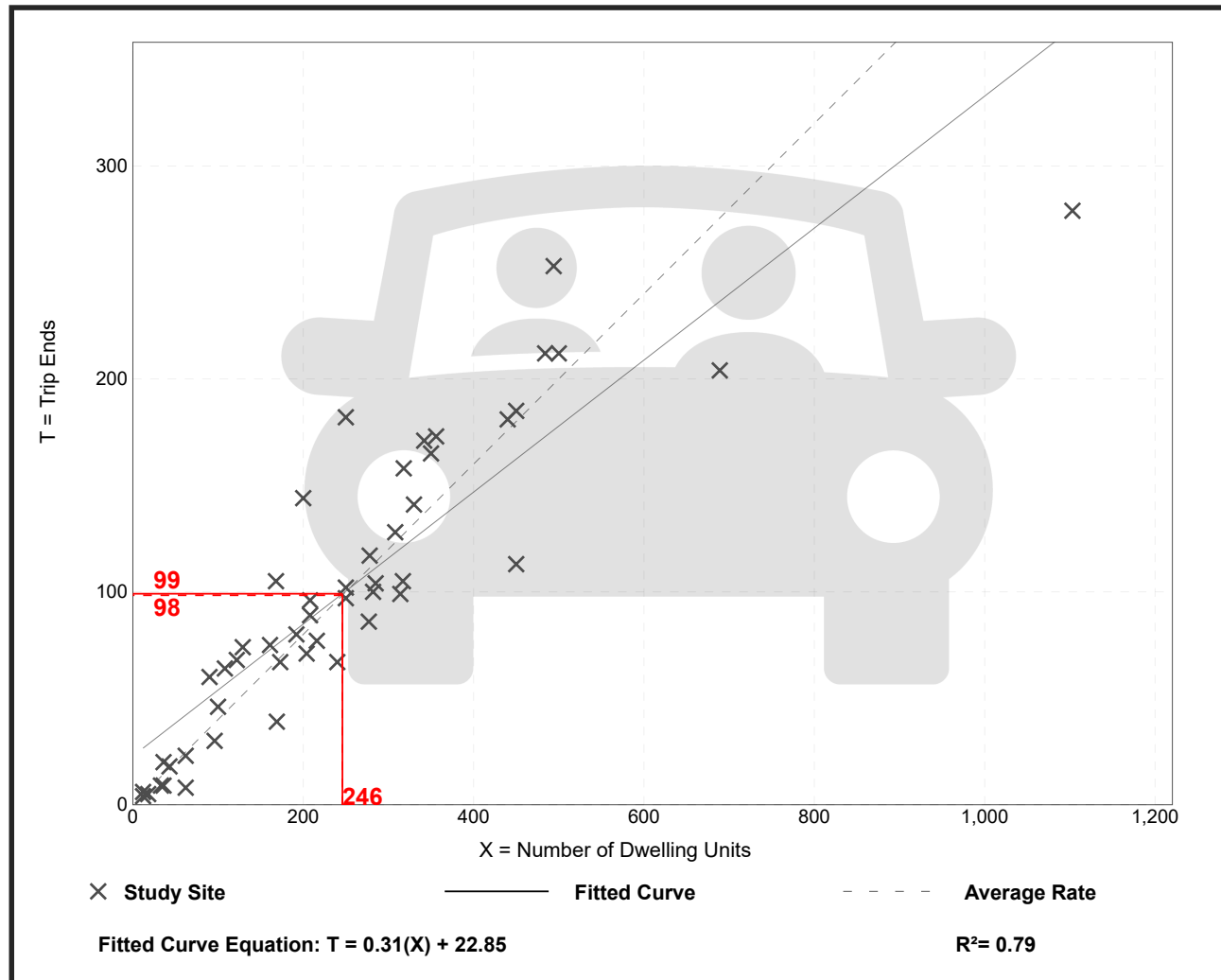
Setting/Location: General Urban/Suburban

Number of Studies: 49
Avg. Num. of Dwelling Units: 249
Directional Distribution: 24% entering, 76% exiting

Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.40 | 0.13 - 0.73 | 0.12 |

Data Plot and Equation



Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 59

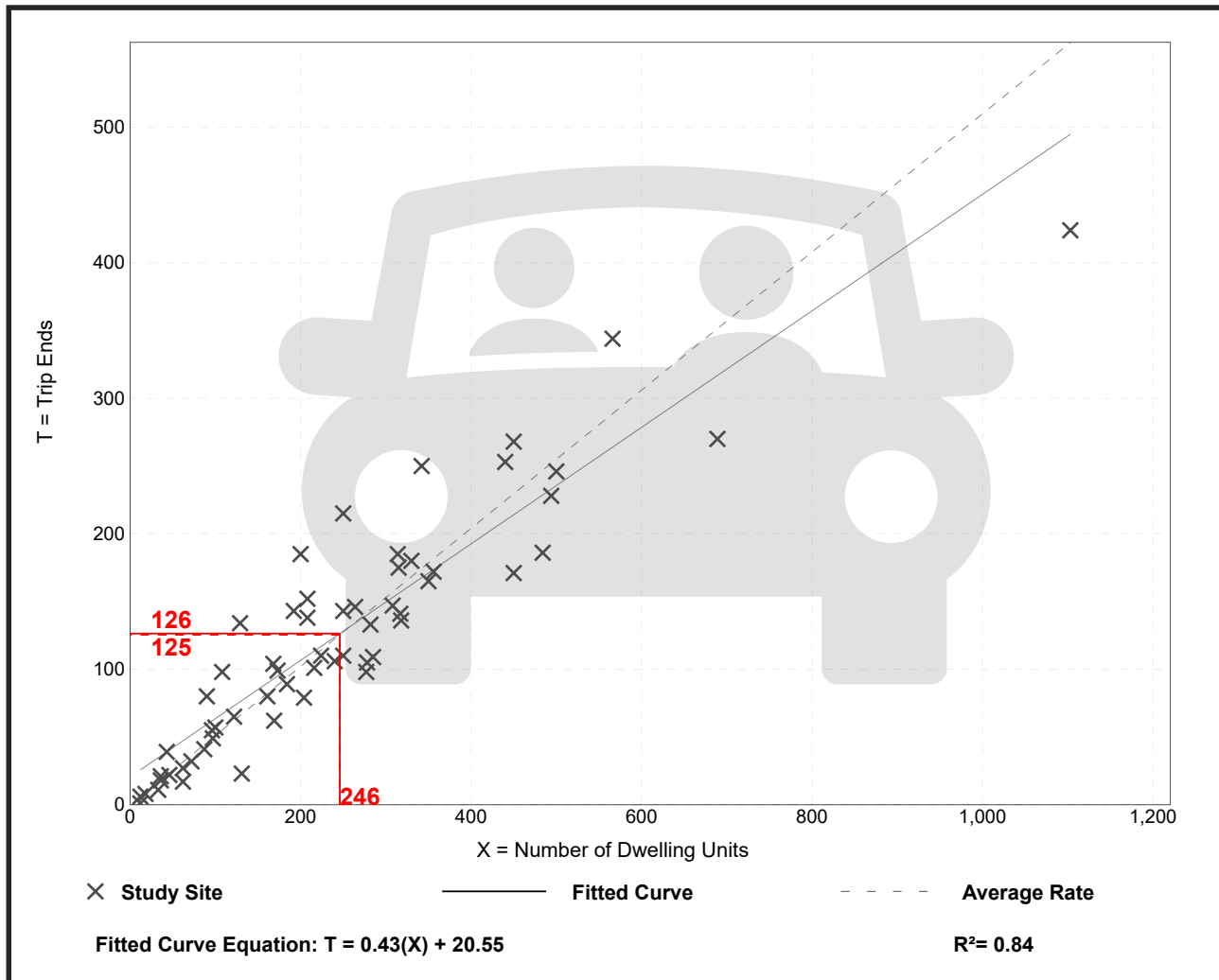
Avg. Num. of Dwelling Units: 241

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.51 | 0.08 - 1.04 | 0.15 |

Data Plot and Equation



Appendix D

Trip Distributions

Section 1

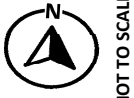
Intersection Trips



Proprietors Rd

Proprietors Rd

| | | | | |
|----|-----|-----|---|-----|
| | | | ↑ | 117 |
| | | | ← | 467 |
| 56 | 7 | 107 | ↓ | 69 |
| ← | ↓ | → | | |
| | 58 | ↑ | ← | ↑ |
| | 472 | → | 4 | 0 |
| | 25 | ↓ | | → |
| | | | | 21 |



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT

2025 AM PEAK BACKGROUND COUNTS

DESIGN AGENCY



DESIGNER

JRD

REVIEWER

VMK 03-24-26

PROJECT ID

CIG-10209

SHEET

TOTAL

1

14



Proprietors Rd

Proprietors Rd

| | | | | | |
|----|-----|-----|---|-----|----|
| 66 | 8 | 125 | ↑ | 136 | |
| ← | ↓ | → | ← | 544 | |
| | | | ↓ | 80 | |
| | 68 | ↑ | ← | ↑ | → |
| | 550 | → | 5 | 0 | 24 |
| | 29 | ↓ | | | |



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT
2026 AM DESIGN HOUR BACKGROUND VOLUMES
 (2025 COUNTS X DESIGN HOUR FACTOR + GROWTH)

DESIGN AGENCY



DESIGNER

JRD

REVIEWER

VMK 03-24-26

PROJECT ID

CIG-10209

SHEET

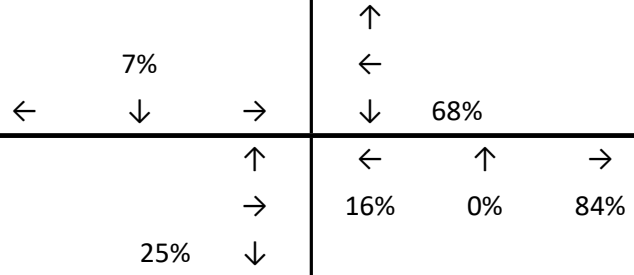
TOTAL

2 14



Proprietors Rd

Proprietors Rd



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT
 AM SITE TRIP PERCENTAGE DISTRIBUTION

DESIGN AGENCY



DESIGNER

JRD

REVIEWER

VMK 03-24-26

PROJECT ID

CIG-10209

SHEET

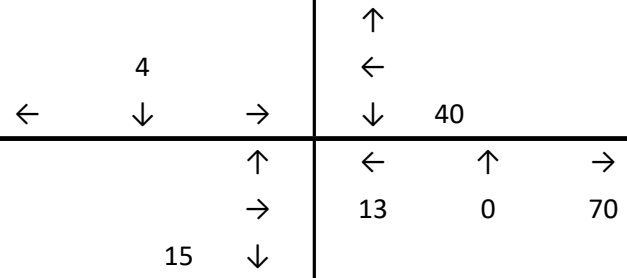
TOTAL

3 14



Proprietors Rd

Proprietors Rd



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT
 AM SITE TRIP GENERATION DISTRIBUTION

DESIGN AGENCY



DESIGNER
JRD

REVIEWER
VMK 03-24-26

PROJECT ID
CIG-10209

| SHEET | TOTAL |
|-------|-------|
| 4 | 14 |

| Enter | Exit |
|-------|------|
| 99 | 75 |
| 24 | 75 |



Proprietors Rd

Proprietors Rd

| | | | | | |
|----|-----|-----|----|-----|----|
| 66 | 12 | 125 | ↑ | 136 | |
| ← | ↓ | → | ← | 544 | |
| | | | ↓ | 120 | |
| | 68 | ↑ | ← | ↑ | → |
| | 550 | → | 18 | 0 | 94 |
| | 44 | ↓ | | | |



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT
 2026 AM DESIGN HOUR TOTAL (FULL-BUILD) TRAFFIC
 (2026 BACKGROUND + SITE TRIP GENERATION)

DESIGN AGENCY



COMPASS
INFRASTRUCTURE GROUP

DESIGNER
JRD

REVIEWER
VMK 03-24-26

PROJECT ID
CIG-10209

| | |
|-------|-------|
| SHEET | TOTAL |
| 5 | 14 |



Proprietors Rd

Proprietors Rd

| | | | | |
|----|-----|-----|---|-----|
| | | | ↑ | 142 |
| 72 | 9 | 138 | ← | 566 |
| ← | ↓ | → | ↓ | 84 |
| | 70 | ↑ | ← | ↑ |
| | 572 | → | 5 | 0 |
| | 30 | ↓ | | → |
| | | | | 25 |



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT
2036 AM DESIGN HOUR BACKGROUND VOLUMES
 (2025 COUNTS X DESIGN HOUR FACTOR + GROWTH)

DESIGN AGENCY



DESIGNER

JRD

REVIEWER

VMK 03-24-26

PROJECT ID

CIG-10209

SHEET TOTAL

6 14



Proprietors Rd

Proprietors Rd

| | | | | | |
|----|-----|-----|----|-----|----|
| 72 | 13 | 138 | ↑ | 142 | |
| ← | ↓ | → | ← | 566 | |
| | | | ↓ | 124 | |
| | 70 | ↑ | ← | ↑ | → |
| | 572 | → | 18 | 0 | 95 |
| | 45 | ↓ | | | |



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT
 2036 AM DESIGN HOUR TOTAL (FULL-BUILD) TRAFFIC
 (2036 BACKGROUND + SITE TRIP GENERATION)

| | |
|---------------|-------|
| DESIGN AGENCY | |
| | |
| DESIGNER | |
| JRD | |
| REVIEWER | |
| VMK 03-24-26 | |
| PROJECT ID | |
| CIG-10209 | |
| SHEET | TOTAL |
| 7 | 14 |



Proprietors Rd

Proprietors Rd

| | | | | |
|-----|-----|----|----|-----|
| | | | ↑ | 109 |
| 117 | 0 | 75 | ← | 680 |
| ← | ↓ | → | ↓ | 8 |
| | 47 | ↑ | ← | ↑ |
| | 710 | → | 16 | 6 |
| | 2 | ↓ | | 22 |



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT
 2025 PM PEAK BACKGROUND VOLUMES

DESIGN AGENCY



DESIGNER

JRD

REVIEWER

VMK 03-24-26

PROJECT ID

CIG-10209

SHEET

TOTAL

8 14



Proprietors Rd

Proprietors Rd

| | | | | |
|-----|-----|----|----|-----|
| | | | ↑ | 127 |
| 137 | 0 | 88 | ← | 792 |
| ← | ↓ | → | ↓ | 9 |
| | 55 | ↑ | ← | ↑ |
| | 827 | → | 19 | 7 |
| | 2 | ↓ | | 26 |



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT
2026 PM DESIGN HOUR BACKGROUND VOLUMES
(2025 COUNTS X DESIGN HOUR FACTOR + GROWTH)

DESIGN AGENCY



DESIGNER

JRD

REVIEWER

VMK 03-24-26

PROJECT ID

CIG-10209

SHEET

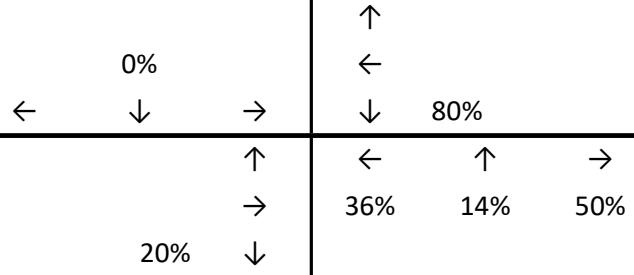
TOTAL

9 14



Proprietors Rd

Proprietors Rd



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT
 PM SITE TRIP PERCENTAGE DISTRIBUTION

DESIGN AGENCY



DESIGNER

JRD

REVIEWER

VMK 03-24-26

PROJECT ID

CIG-10209

SHEET

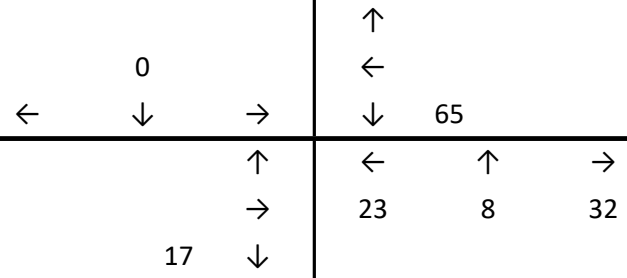
TOTAL

10 14



Proprietors Rd

Proprietors Rd



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT
 PM SITE TRIP GENERATION DISTRIBUTION

DESIGN AGENCY



DESIGNER

JRD

REVIEWER

VMK 03-24-26

PROJECT ID

CIG-10209

SHEET TOTAL

11 14

| Enter | Exit |
|-------|------|
| 125 | 78 |
| 78 | 47 |



Proprietors Rd

Proprietors Rd

| | | |
|-----|-----|----|
| 137 | 0 | 88 |
| ← | ↓ | → |
| | 55 | ↑ |
| | 827 | → |
| | 19 | ↓ |

| | | |
|----|-----|----|
| ↑ | 127 | |
| ← | 792 | |
| ↓ | 74 | |
| ← | ↑ | → |
| 42 | 15 | 58 |



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT
 2026 PM DESIGN HOUR TOTAL (FULL-BUILD) TRAFFIC
 (2026 BACKGROUND + SITE TRIP GENERATION)

DESIGN AGENCY



DESIGNER

JRD

REVIEWER

VMK 03-24-26

PROJECT ID

CIG-10209

SHEET

TOTAL

12 14



Proprietors Rd

Proprietors Rd

| | | | | |
|-----|-----|----|----|-----|
| | | | ↑ | 132 |
| | | | ← | 824 |
| 151 | 0 | 97 | ↓ | 10 |
| ← | ↓ | → | | |
| | 57 | ↑ | ← | ↑ |
| | 860 | → | 19 | 7 |
| | 2 | ↓ | | → |
| | | | | 27 |



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT
2036 PM DESIGN HOUR BACKGROUND VOLUMES
(2025 COUNTS X DESIGN HOUR FACTOR + GROWTH)

DESIGN AGENCY



DESIGNER

JRD

REVIEWER

VMK 03-24-26

PROJECT ID

CIG-10209

SHEET

TOTAL

13 14



Proprietors Rd

Proprietors Rd

| | | | | | |
|-----|-----|----|----|-----|----|
| 151 | 0 | 97 | ↑ | 132 | |
| ← | ↓ | → | ← | 824 | |
| | | | ↓ | 75 | |
| | 57 | ↑ | ← | ↑ | → |
| | 860 | → | 42 | 15 | 59 |
| | 19 | ↓ | | | |



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT
 2036 PM DESIGN HOUR TOTAL (FULL-BUILD) TRAFFIC
 (2036 BACKGROUND + SITE TRIP GENERATION)

DESIGN AGENCY



DESIGNER

JRD

REVIEWER

VMK 03-24-26

PROJECT ID

CIG-10209

SHEET TOTAL

14 14

Section 2

Roundabout Trips



Proprietors Rd

Proprietors Rd

| | | | | | | | |
|--|----|-----|-----|----|-----|----|--|
| | 72 | 13 | 138 | ↑ | 142 | | |
| | ← | ↓ | → | ← | 566 | | |
| | | | | ↓ | 124 | | |
| | | 70 | ↑ | ← | ↑ | → | |
| | | 572 | → | 18 | 0 | 95 | |
| | | 45 | ↓ | | | | |
| | 61 | 62 | 59 | ↑ | 83 | | |
| | ← | ↓ | → | ← | 0 | | |
| | | | | ↓ | 0 | | |
| | | 15 | ↑ | ← | ↑ | → | |
| | | 0 | → | 0 | 15 | 0 | |
| | | 0 | ↓ | | | | |



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT
 2036 AM DESIGN HOUR TOTAL (FULL-BUILD) TRAFFIC W/ INTERIOR ROUNDABOUT
 (2036 BACKGROUND + SITE TRIP GENERATION)

| | |
|---------------|-------|
| DESIGN AGENCY | |
| | |
| DESIGNER | |
| MVK | |
| REVIEWER | |
| JRD 03-25-26 | |
| PROJECT ID | |
| CIG-10209 | |
| SHEET | TOTAL |
| 1 | 2 |



Proprietors Rd

Proprietors Rd

| | | | | | | | |
|--|-----|-----|----|----|-----|----|--|
| | 151 | 0 | 97 | ↑ | 132 | | |
| | ← | ↓ | → | ← | 824 | | |
| | | | | ↓ | 75 | | |
| | | 57 | ↑ | ← | ↑ | → | |
| | | 860 | → | 42 | 15 | 59 | |
| | | 19 | ↓ | | | | |
| | 6 | 6 | 82 | ↑ | 63 | | |
| | ← | ↓ | → | ← | 0 | | |
| | | | | ↓ | 0 | | |
| | | 26 | ↑ | ← | ↑ | → | |
| | | 0 | → | 0 | 27 | 0 | |
| | | 0 | ↓ | | | | |



NOT TO SCALE

BOUNDLESS RESIDENTIAL DEVELOPMENT
 2036 PM DESIGN HOUR TOTAL (FULL-BUILD) TRAFFIC W/ INTERIOR ROUNDABOUT
 (2036 BACKGROUND + SITE TRIP GENERATION)

| | |
|---------------|-------|
| DESIGN AGENCY | |
| | |
| DESIGNER | |
| MVK | |
| REVIEWER | |
| JRD 03-25-26 | |
| PROJECT ID | |
| CIG-10209 | |
| SHEET | TOTAL |
| 2 | 2 |

Appendix E

HCS Reports

Section 1

Proposed Signal Timings

Proposed Timing

| # 16 | Proprietors & 161 | | | | | | | |
|-------------------------|-------------------|------------|----------|-------------|--------------|------------|----------|-------------|
| | 161 WB LT | 161 EB | 3 | Prop SB | 161 EB LT | 161 WB | | Prop NB |
| PHASE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Min Green | 10 | 35 | | 15 | 10 | 35 | | 15 |
| Passage | 5.0 | | | 5.0 | 5.0 | | | 5.0 |
| Max 1 | 15 | 42 | | 23 | 14 | 43 | | 23 |
| Max 2 | 15 | 45 | | 20 | 15 | 45 | | 20 |
| Yellow/10 | 3.9 | 4.8 | | 4.1 | 3.2 | 4.8 | | 4.1 |
| Red/10 | 1.2 | 1 | | 1 | 1.4 | 1 | | 1 |
| Walk | | 8 | | 8 | | 9 | | 16 |
| DON'T WALK | | 12 | | 12 | | 17 | | 10 |
| Act RIW | | X | | | | X | | |
| Walk offset Time | | | | 6 | | | | 6 |
| Walk offset Mode | | | | 0 - Adv Wlk | | | | 0 - Adv Wlk |
| Initialize | 1 | 3 | 0 | 1 | 1 | 3 | 0 | 1 |
| Veh Recall | | 3 | | | | 3 | | |
| Ped Recall | | 2 | | | | 2 | | |
| Non Lock | X | | | | X | | | |
| Dual Entry | | X | | X | | X | | X |
| Omit | 2 | | | | 6 | | | |
| Delay | | | | 10 | | | | 10 |

Action Pattern
254 254

Plan 1 SMTWHFS
Hr Min Action Pattern
 0 1 254 254

Max Green 1
0600 - 0900 (MTWHF)

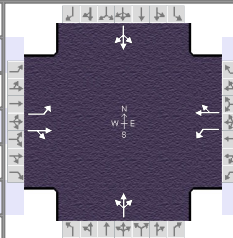
Max Green 2
1500-1800 (MTWHF)

Section 2

AM Opening Year

HCS Signalized Intersection Input Data

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | | |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '26 Bck Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|-----------------------|----|-----|----|----|-----|-----|----|---|----|-----|---|----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 68 | 550 | 29 | 80 | 544 | 136 | 4 | 0 | 24 | 125 | 8 | 66 |

| Signal Information | | | | Signal Timing (s) | | | | | | | | Signal Phases | | | |
|--------------------|-------|-----------------|-----|-------------------|------|-----|------|------|-----|-----|--|---------------|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | | |

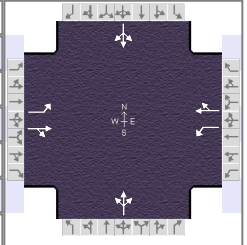
| Traffic Information | EB | | | WB | | | NB | | | SB | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 68 | 550 | 29 | 80 | 544 | 136 | 4 | 0 | 24 | 125 | 8 | 66 |
| Initial Queue (Q_b), veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Base Saturation Flow Rate (s_o), veh/h | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Parking (N_m), man/h | | None | | | None | | | None | | | None | |
| Heavy Vehicles (P_{HV}), % | 2 | 2 | | 1 | 1 | | | 1 | | | 2 | |
| Ped / Bike / RTOR, /h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buses (N_b), buses/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arrival Type (AT) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Upstream Filtering (I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lane Width (W), ft | 12.0 | 12.0 | | 12.0 | 12.0 | | | 12.0 | | | 12.0 | |
| Turn Bay Length, ft | 160 | 0 | | 135 | 0 | | | 0 | | | 0 | |
| Grade (P_g), % | | 0 | | | 0 | | | 0 | | | 0 | |
| Speed Limit, mi/h | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |

| Phase Information | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|------|------|------|------|-----|------|-----|------|
| Maximum Green (G_{max}) or Phase Split, s | 18.6 | 47.8 | 20.1 | 49.3 | | 28.1 | | 28.1 |
| Yellow Change Interval (Y), s | 3.2 | 4.8 | 3.9 | 4.8 | | 4.1 | | 4.1 |
| Red Clearance Interval (R_c), s | 1.4 | 1.0 | 1.2 | 1.0 | | 1.0 | | 1.0 |
| Minimum Green (G_{min}), s | 10 | 35 | 10 | 35 | | 15 | | 15 |
| Start-Up Lost Time (l_t), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Extension of Effective Green (e), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Passage (PT), s | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | | 2.0 |
| Recall Mode | Max | Max | Max | Max | | Max | | Max |
| Dual Entry | No | Yes | No | Yes | | Yes | | Yes |
| Walk ($Walk$), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |
| Pedestrian Clearance Time (PC), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |

| Multimodal Information | EB | | | WB | | | NB | | | SB | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| 85th % Speed / Rest in Walk / Corner Radius | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 |
| Walkway / Crosswalk Width / Length, ft | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 |
| Street Width / Island / Curb, ft | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No |
| Width Outside / Bike Lane / Shoulder, ft | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 |
| Pedestrian Signal / Occupied Parking | No | 0.50 | | No | 0.50 | | No | 0.50 | | No | 0.50 | |

HCS Signalized Intersection Results Summary

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | | |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '26 Bck Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|-----------------------|----|-----|----|----|-----|-----|----|---|----|-----|---|----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 68 | 550 | 29 | 80 | 544 | 136 | 4 | 0 | 24 | 125 | 8 | 66 |

| Signal Information | | | | Signal Timing (s) | | | | | | | | Signal Phases | | | |
|--------------------|-------|-----------------|-----|-------------------|------|-----|------|------|-----|-----|--|---------------|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | | |

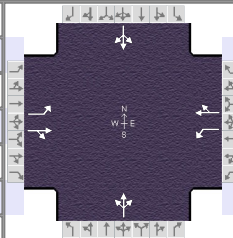
| Timer Results | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|-----------------------------------|------|------|------|------|-----|------|-----|------|
| Assigned Phase | 5 | 2 | 1 | 6 | | 8 | | 4 |
| Case Number | 1.1 | 4.0 | 1.1 | 4.0 | | 8.0 | | 8.0 |
| Phase Duration, s | 18.6 | 47.8 | 20.1 | 49.3 | | 28.1 | | 28.1 |
| Change Period, ($Y+R_c$), s | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Max Allow Headway (MAH), s | 3.1 | 0.0 | 3.1 | 0.0 | | 3.2 | | 3.2 |
| Queue Clearance Time (g_s), s | 3.7 | | 4.0 | | | 3.4 | | 14.2 |
| Green Extension Time (g_e), s | 0.1 | 0.0 | 0.1 | 0.0 | | 0.4 | | 0.3 |
| Phase Call Probability | 1.00 | | 1.00 | | | 1.00 | | 1.00 |
| Max Out Probability | 0.00 | | 0.00 | | | 0.00 | | 0.01 |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|-------|-------|----|-------|-------|----|-------|---|----|-------|---|----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Assigned Movement | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Adjusted Flow Rate (v), veh/h | 73 | 623 | | 86 | 731 | | 30 | | | 214 | | |
| Adjusted Saturation Flow Rate (s), veh/h/ln | 1781 | 1854 | | 1795 | 1820 | | 1610 | | | 1478 | | |
| Queue Service Time (g_s), s | 1.7 | 27.3 | | 2.0 | 35.3 | | 0.0 | | | 10.9 | | |
| Cycle Queue Clearance Time (g_c), s | 1.7 | 27.3 | | 2.0 | 35.3 | | 1.4 | | | 12.2 | | |
| Green Ratio (g/C) | 0.58 | 0.44 | | 0.59 | 0.45 | | 0.24 | | | 0.24 | | |
| Capacity (c), veh/h | 382 | 811 | | 479 | 825 | | 429 | | | 415 | | |
| Volume-to-Capacity Ratio (X) | 0.191 | 0.768 | | 0.180 | 0.887 | | 0.070 | | | 0.516 | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 33 | 471 | | 36 | 603 | | 26 | | | 213 | | |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.3 | 18.6 | | 1.4 | 23.9 | | 1.0 | | | 8.4 | | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.21 | 0.00 | | 0.27 | 0.00 | | 0.00 | | | 0.00 | | |
| Uniform Delay (d_1), s/veh | 16.1 | 22.9 | | 12.7 | 24.0 | | 28.3 | | | 32.3 | | |
| Incremental Delay (d_2), s/veh | 1.1 | 6.9 | | 0.8 | 13.5 | | 0.3 | | | 4.5 | | |
| Initial Queue Delay (d_3), s/veh | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | | 0.0 | | |
| Control Delay (d), s/veh | 17.2 | 29.7 | | 13.5 | 37.5 | | 28.6 | | | 36.8 | | |
| Level of Service (LOS) | B | C | | B | D | | C | | | D | | |
| Approach Delay, s/veh / LOS | 28.4 | C | | 35.0 | C | | 28.6 | C | | 36.8 | D | |
| Intersection Delay, s/veh / LOS | 32.5 | | | | | | C | | | | | |

| Multimodal Results | EB | | WB | | NB | | SB | |
|----------------------------|------|---|------|---|------|---|------|---|
| Pedestrian LOS Score / LOS | 1.68 | B | 1.68 | B | 1.93 | B | 1.93 | B |
| Bicycle LOS Score / LOS | 1.64 | B | 1.84 | B | 0.54 | A | 0.84 | A |

HCS Signalized Intersection Intermediate Values

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | | |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '26 Bck Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|--------------------|----|-----|----|----|-----|-----|----|---|----|-----|---|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 68 | 550 | 29 | 80 | 544 | 136 | 4 | 0 | 24 | 125 | 8 | 66 |

| Signal Information | | | | Signal Phases | | | | | | | | |
|--------------------|-------|-----------------|-----|---------------|------|-----|------|------|-----|-----|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | |

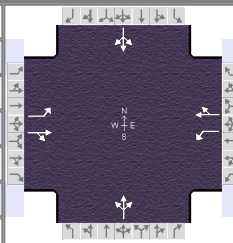
| Saturation Flow / Delay | L | T | R | L | T | R | L | T | R | L | T | R |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Width Adjustment Factor (f_w) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles and Grade Factor (f_{HVg}) | 0.984 | 0.984 | 1.000 | 0.992 | 0.992 | 1.000 | 1.000 | 0.992 | 1.000 | 1.000 | 0.984 | 1.000 |
| Parking Activity Adjustment Factor (f_p) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Bus Blockage Adjustment Factor (f_{bb}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Area Type Adjustment Factor (f_a) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Lane Utilization Adjustment Factor (f_{LU}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Adjustment Factor (f_{LT}) | 0.952 | 0.000 | | 0.952 | 0.000 | | 0.968 | 0.854 | | 0.829 | 0.790 | |
| Right-Turn Adjustment Factor (f_{RT}) | | 0.991 | 0.991 | | 0.965 | 0.965 | | 0.000 | 0.854 | | 0.000 | 0.790 |
| Left-Turn Pedestrian Adjustment Factor (f_{LPB}) | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 | | |
| Right-Turn Ped-Bike Adjustment Factor (f_{RPB}) | | | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 |
| Work Zone Adjustment Factor (f_{wz}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| DDI Factor (f_{DDI}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$) | 1.00 | | | 1.00 | | | | | | | | |
| Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$) | | | | | | | 1.00 | | | 1.00 | | |
| Movement Saturation Flow Rate (s), veh/h | 1781 | 1761 | 93 | 1795 | 1456 | 364 | 230 | 0 | 1380 | 928 | 59 | 490 |
| Proportion of Vehicles Arriving on Green (P) | 0.15 | 0.44 | 0.44 | 0.16 | 0.45 | 0.45 | 0.24 | 0.00 | 0.24 | 0.24 | 0.24 | 0.24 |
| Incremental Delay Factor (k) | 0.50 | 0.50 | | 0.50 | 0.50 | | | 0.50 | | | 0.50 | |

| Signal Timing / Movement Groups | EBL | EBT/R | WBL | WBT/R | NBL | NBT/R | SBL | SBT/R |
|---|------|-------|------|-------|-----|-------|-----|-------|
| Lost Time (t_L) | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Green Ratio (g/C) | 0.58 | 0.44 | 0.59 | 0.45 | | 0.24 | | 0.24 |
| Permitted Saturation Flow Rate (s_p), veh/h/ln | 725 | 0 | 808 | 0 | | 1340 | | 1407 |
| Shared Saturation Flow Rate (s_{sh}), veh/h/ln | | | | | | 1779 | | 1533 |
| Permitted Effective Green Time (g_p), s | 42.0 | 0.0 | 42.0 | 0.0 | | 23.0 | | 23.0 |
| Permitted Service Time (g_u), s | 6.2 | 0.0 | 14.7 | 0.0 | | 10.8 | | 21.6 |
| Permitted Queue Service Time (g_{ps}), s | 4.0 | | 3.3 | | | 0.0 | | 10.9 |
| Time to First Blockage (g_t), s | 0.0 | 0.0 | 0.0 | 0.0 | | 10.0 | | 1.2 |
| Queue Service Time Before Blockage (g_{fs}), s | | | | | | 10.0 | | 1.2 |
| Protected Right Saturation Flow (s_R), veh/h/ln | | | | | | | | |
| Protected Right Effective Green Time (g_R), s | | | | | | | | |

| Multimodal | EB | | WB | | NB | | SB | |
|----------------------------------|--------|-------|--------|-------|--------|-------|--------|-------|
| Pedestrian F_w / F_v | 0.972 | 0.000 | 0.972 | 0.000 | 1.198 | 0.000 | 1.198 | 0.000 |
| Pedestrian F_s / F_{delay} | 0.000 | 0.109 | 0.000 | 0.107 | 0.000 | 0.133 | 0.000 | 0.133 |
| Pedestrian M_{corner} / M_{cw} | 0.00 | | 0.00 | | 0.00 | | 0.00 | |
| Bicycle c_b / d_b | 875.00 | 15.19 | 906.25 | 14.36 | 479.17 | 27.76 | 479.17 | 27.76 |
| Bicycle F_w / F_v | -3.64 | 1.15 | -3.64 | 1.35 | -3.64 | 0.05 | -3.64 | 0.35 |

HCS Signalized Intersection Results Graphical Summary

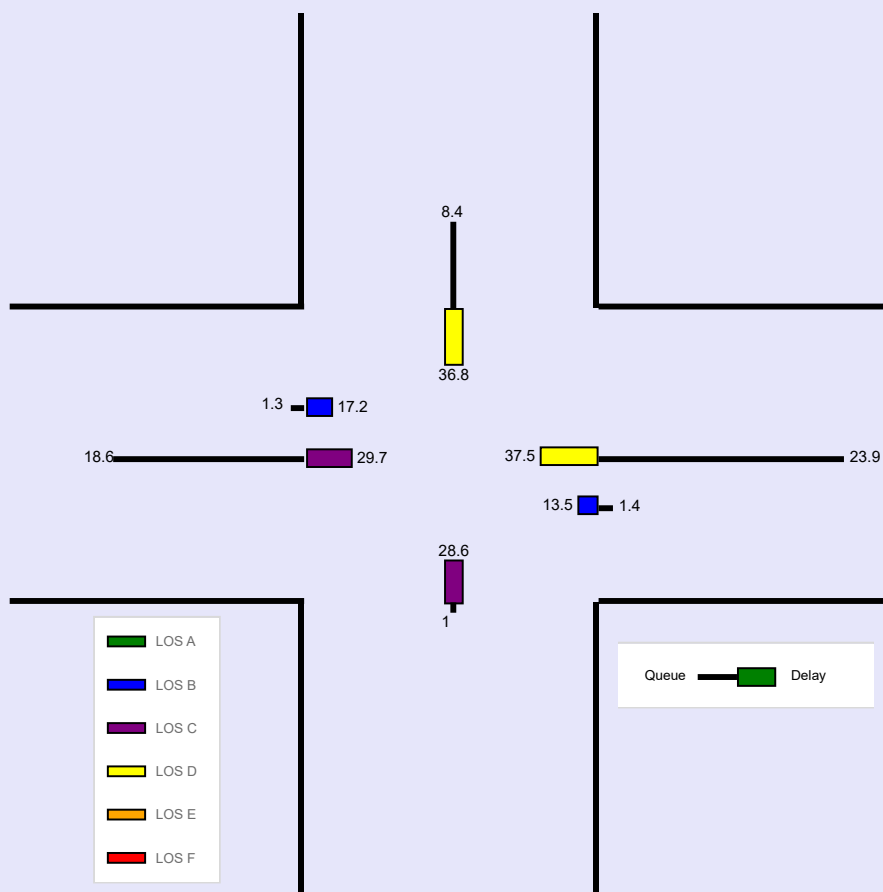
| General Information | | | | Intersection Information | |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|
| Agency | Compass | | | Duration, h | 0.250 |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '26 Bck Existing Timings.xus | | |
| Project Description | Boundless Residential Development | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|----|-----|-----|----|---|----|-----|---|----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 68 | 550 | 29 | 80 | 544 | 136 | 4 | 0 | 24 | 125 | 8 | 66 |

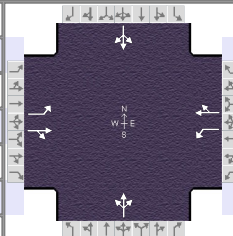
| Signal Information | | | | Phase Diagram | | | | | | | | | | |
|--------------------|-------|-----------------|-----|---------------|------|-----|------|------|-----|-----|--|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | | | | | | | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | | | | | | | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | | | | | | | | | | | |
| | | | | Green | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | | | | |
| | | | | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | | |
| | | | | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|------|------|---|------|------|---|------|------|---|------|------|---|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 33 | 471 | | 36 | 603 | | | 26 | | | 213 | |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.3 | 18.6 | | 1.4 | 23.9 | | | 1.0 | | | 8.4 | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.21 | 0.00 | | 0.27 | 0.00 | | | 0.00 | | | 0.00 | |
| Control Delay (d), s/veh | 17.2 | 29.7 | | 13.5 | 37.5 | | | 28.6 | | | 36.8 | |
| Level of Service (LOS) | B | C | | B | D | | | C | | | D | |
| Approach Delay, s/veh / LOS | 28.4 | | C | 35.0 | | C | 28.6 | | C | 36.8 | | D |
| Intersection Delay, s/veh / LOS | 32.5 | | | | | | C | | | | | |



HCS Signalized Intersection Input Data

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|-----------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | | |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '26 Build Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|-----|-----|-----|----|---|----|-----|----|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 68 | 550 | 44 | 120 | 544 | 136 | 18 | 0 | 94 | 125 | 12 | 66 |

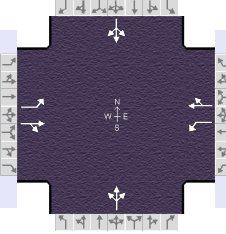
| Signal Information | | | | Signal Phases | | | | | | | | |
|--------------------|-------|-----------------|-----|---------------|------|-----|------|------|-----|-----|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | |

| Traffic Information | EB | | | WB | | | NB | | | SB | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 68 | 550 | 44 | 120 | 544 | 136 | 18 | 0 | 94 | 125 | 12 | 66 |
| Initial Queue (Q _b), veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Base Saturation Flow Rate (s ₀), veh/h | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Parking (N _m), man/h | None | | | None | | | None | | | None | | |
| Heavy Vehicles (P _{HV}), % | 2 | 2 | | 1 | 1 | | | 1 | | | 2 | |
| Ped / Bike / RTOR, /h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buses (N _b), buses/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arrival Type (AT) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Upstream Filtering (I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lane Width (W), ft | 12.0 | 12.0 | | 12.0 | 12.0 | | | 12.0 | | | 12.0 | |
| Turn Bay Length, ft | 160 | 0 | | 135 | 0 | | | 0 | | | 0 | |
| Grade (P _g), % | | 0 | | | 0 | | | 0 | | | 0 | |
| Speed Limit, mi/h | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |

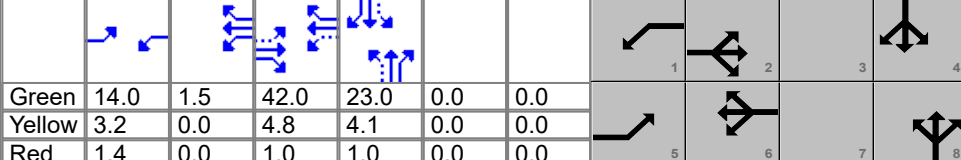
| Phase Information | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|--|------|------|------|------|-----|------|-----|------|
| Maximum Green (G _{max}) or Phase Split, s | 18.6 | 47.8 | 20.1 | 49.3 | | 28.1 | | 28.1 |
| Yellow Change Interval (Y), s | 3.2 | 4.8 | 3.9 | 4.8 | | 4.1 | | 4.1 |
| Red Clearance Interval (R _c), s | 1.4 | 1.0 | 1.2 | 1.0 | | 1.0 | | 1.0 |
| Minimum Green (G _{min}), s | 10 | 35 | 10 | 35 | | 15 | | 15 |
| Start-Up Lost Time (I _t), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Extension of Effective Green (e), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Passage (P _T), s | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | | 2.0 |
| Recall Mode | Max | Max | Max | Max | | Max | | Max |
| Dual Entry | No | Yes | No | Yes | | Yes | | Yes |
| Walk (Walk), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |
| Pedestrian Clearance Time (P _C), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |

| Multimodal Information | EB | | | WB | | | NB | | | SB | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| 85th % Speed / Rest in Walk / Corner Radius | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 |
| Walkway / Crosswalk Width / Length, ft | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 |
| Street Width / Island / Curb, ft | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No |
| Width Outside / Bike Lane / Shoulder, ft | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 |
| Pedestrian Signal / Occupied Parking | No | 0.50 | | No | 0.50 | | No | 0.50 | | No | 0.50 | |

HCS Signalized Intersection Results Summary

| General Information | | | | Intersection Information | |  |
|---------------------|-----------------------------------|---------------|-----------------------------------|--------------------------|----------|---|
| Agency | Compass | | | Duration, h | 0.250 | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '26 Build Existing Timings.xus | | | |
| Project Description | Boundless Residential Development | | | | | |

| Demand Information | EB | | | WB | | | NB | | | SB | | |
|-----------------------|----|-----|----|-----|-----|-----|----|---|----|-----|----|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 68 | 550 | 44 | 120 | 544 | 136 | 18 | 0 | 94 | 125 | 12 | 66 |

| Signal Information | | | |  | | | | | | | | | | | | | | |
|--------------------|------|-----------------|-----|--|------|-----|------|------|-----|-----|---------------|-----|-----------------|-----|------------|-------|-----------------|----|
| Cycle, s | 96.0 | Reference Phase | 2 | Green | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | |
| Offset, s | 0 | Reference Point | End | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | Uncoordinated | No | Simult. Gap E/W | On | Force Mode | Fixed | Simult. Gap N/S | On |

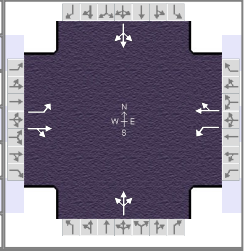
| Timer Results | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|-----------------------------------|------|------|------|------|-----|------|-----|------|
| Assigned Phase | 5 | 2 | 1 | 6 | | 8 | | 4 |
| Case Number | 1.1 | 4.0 | 1.1 | 4.0 | | 8.0 | | 8.0 |
| Phase Duration, s | 18.6 | 47.8 | 20.1 | 49.3 | | 28.1 | | 28.1 |
| Change Period, ($Y+R_c$), s | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Max Allow Headway (MAH), s | 3.1 | 0.0 | 3.1 | 0.0 | | 3.3 | | 3.3 |
| Queue Clearance Time (g_s), s | 3.7 | | 5.0 | | | 7.8 | | 14.8 |
| Green Extension Time (g_e), s | 0.1 | 0.0 | 0.1 | 0.0 | | 0.6 | | 0.5 |
| Phase Call Probability | 1.00 | | 1.00 | | | 1.00 | | 1.00 |
| Max Out Probability | 0.00 | | 0.00 | | | 0.00 | | 0.03 |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|-------|-------|----|-------|-------|----|-------|---|----|-------|---|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Assigned Movement | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Adjusted Flow Rate (v), veh/h | 73 | 639 | | 129 | 731 | | 120 | | | 218 | | |
| Adjusted Saturation Flow Rate (s), veh/h/ln | 1781 | 1846 | | 1795 | 1820 | | 1618 | | | 1436 | | |
| Queue Service Time (g_s), s | 1.7 | 28.6 | | 3.0 | 35.3 | | 0.0 | | | 7.0 | | |
| Cycle Queue Clearance Time (g_c), s | 1.7 | 28.6 | | 3.0 | 35.3 | | 5.8 | | | 12.8 | | |
| Green Ratio (g/C) | 0.58 | 0.44 | | 0.59 | 0.45 | | 0.24 | | | 0.24 | | |
| Capacity (c), veh/h | 382 | 808 | | 467 | 825 | | 431 | | | 405 | | |
| Volume-to-Capacity Ratio (X) | 0.191 | 0.791 | | 0.276 | 0.887 | | 0.279 | | | 0.540 | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 33 | 492 | | 57 | 603 | | 110 | | | 219 | | |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.3 | 19.4 | | 2.3 | 23.9 | | 4.4 | | | 8.6 | | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.21 | 0.00 | | 0.42 | 0.00 | | 0.00 | | | 0.00 | | |
| Uniform Delay (d_1), s/veh | 16.1 | 23.2 | | 13.6 | 24.0 | | 30.0 | | | 32.5 | | |
| Incremental Delay (d_2), s/veh | 1.1 | 7.8 | | 1.5 | 13.5 | | 1.6 | | | 5.1 | | |
| Initial Queue Delay (d_3), s/veh | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | | 0.0 | | |
| Control Delay (d), s/veh | 17.2 | 31.0 | | 15.1 | 37.5 | | 31.6 | | | 37.6 | | |
| Level of Service (LOS) | B | C | | B | D | | C | | | D | | |
| Approach Delay, s/veh / LOS | 29.6 | C | | 34.1 | C | | 31.6 | C | | 37.6 | D | |
| Intersection Delay, s/veh / LOS | 32.7 | | | | | | C | | | | | |

| Multimodal Results | EB | | WB | | NB | | SB | |
|----------------------------|------|---|------|---|------|---|------|---|
| Pedestrian LOS Score / LOS | 1.68 | B | 1.68 | B | 1.93 | B | 1.93 | B |
| Bicycle LOS Score / LOS | 1.66 | B | 1.91 | B | 0.69 | A | 0.85 | A |

HCS Signalized Intersection Intermediate Values

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|-----------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | | |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '26 Build Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|-----|-----|-----|----|---|----|-----|----|----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 68 | 550 | 44 | 120 | 544 | 136 | 18 | 0 | 94 | 125 | 12 | 66 |

| Signal Information | | | | Signal Phases | | | | | | | | | |
|--------------------|-------|-----------------|-----|---------------|------|-----|------|------|-----|-----|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | |

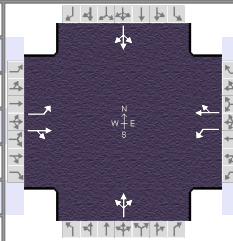
| Saturation Flow / Delay | L | T | R | L | T | R | L | T | R | L | T | R |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Width Adjustment Factor (f_w) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles and Grade Factor (f_{HVg}) | 0.984 | 0.984 | 1.000 | 0.992 | 0.992 | 1.000 | 1.000 | 0.992 | 1.000 | 1.000 | 0.984 | 1.000 |
| Parking Activity Adjustment Factor (f_p) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Bus Blockage Adjustment Factor (f_{bb}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Area Type Adjustment Factor (f_a) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Lane Utilization Adjustment Factor (f_{LU}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Adjustment Factor (f_{LT}) | 0.952 | 0.000 | | 0.952 | 0.000 | | 0.961 | 0.858 | | 0.796 | 0.768 | |
| Right-Turn Adjustment Factor (f_{RT}) | | 0.987 | 0.987 | | 0.965 | 0.965 | | 0.000 | 0.858 | | 0.000 | 0.768 |
| Left-Turn Pedestrian Adjustment Factor (f_{LPB}) | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 | | |
| Right-Turn Ped-Bike Adjustment Factor (f_{RPB}) | | | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 |
| Work Zone Adjustment Factor (f_{WZ}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| DDI Factor (f_{DDI}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$) | 1.00 | | | 1.00 | | | | | | | | |
| Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$) | | | | | | | 1.00 | | | 1.00 | | |
| Movement Saturation Flow Rate (s), veh/h | 1781 | 1709 | 137 | 1795 | 1456 | 364 | 260 | 0 | 1358 | 884 | 85 | 467 |
| Proportion of Vehicles Arriving on Green (P) | 0.15 | 0.44 | 0.44 | 0.16 | 0.45 | 0.45 | 0.24 | 0.00 | 0.24 | 0.24 | 0.24 | 0.24 |
| Incremental Delay Factor (k) | 0.50 | 0.50 | | 0.50 | 0.50 | | | 0.50 | | | 0.50 | |

| Signal Timing / Movement Groups | EBL | EBT/R | WBL | WBT/R | NBL | NBT/R | SBL | SBT/R |
|---|------|-------|------|-------|-----|-------|-----|-------|
| Lost Time (t_L) | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Green Ratio (g/C) | 0.58 | 0.44 | 0.59 | 0.45 | | 0.24 | | 0.24 |
| Permitted Saturation Flow Rate (s_p), veh/h/ln | 725 | 0 | 796 | 0 | | 1335 | | 1314 |
| Shared Saturation Flow Rate (s_{sh}), veh/h/ln | | | | | | 1765 | | 1468 |
| Permitted Effective Green Time (g_p), s | 42.0 | 0.0 | 42.0 | 0.0 | | 23.0 | | 23.0 |
| Permitted Service Time (g_u), s | 6.2 | 0.0 | 13.4 | 0.0 | | 10.2 | | 17.2 |
| Permitted Queue Service Time (g_{ps}), s | 4.0 | | 5.5 | | | 0.0 | | 7.0 |
| Time to First Blockage (g_t), s | 0.0 | 0.0 | 0.0 | 0.0 | | 9.1 | | 1.2 |
| Queue Service Time Before Blockage (g_{fs}), s | | | | | | 0.2 | | 1.2 |
| Protected Right Saturation Flow (s_R), veh/h/ln | | | | | | | | |
| Protected Right Effective Green Time (g_R), s | | | | | | | | |

| Multimodal | EB | | WB | | NB | | SB | |
|----------------------------------|--------|-------|--------|-------|--------|-------|--------|-------|
| Pedestrian F_w / F_v | 0.972 | 0.000 | 0.972 | 0.000 | 1.198 | 0.000 | 1.198 | 0.000 |
| Pedestrian F_s / F_{delay} | 0.000 | 0.109 | 0.000 | 0.107 | 0.000 | 0.133 | 0.000 | 0.133 |
| Pedestrian M_{corner} / M_{cw} | 0.00 | | 0.00 | | 0.00 | | 0.00 | |
| Bicycle c_b / d_b | 875.00 | 15.19 | 906.25 | 14.36 | 479.17 | 27.76 | 479.17 | 27.76 |
| Bicycle F_w / F_v | -3.64 | 1.17 | -3.64 | 1.42 | -3.64 | 0.20 | -3.64 | 0.36 |

HCS Signalized Intersection Results Graphical Summary

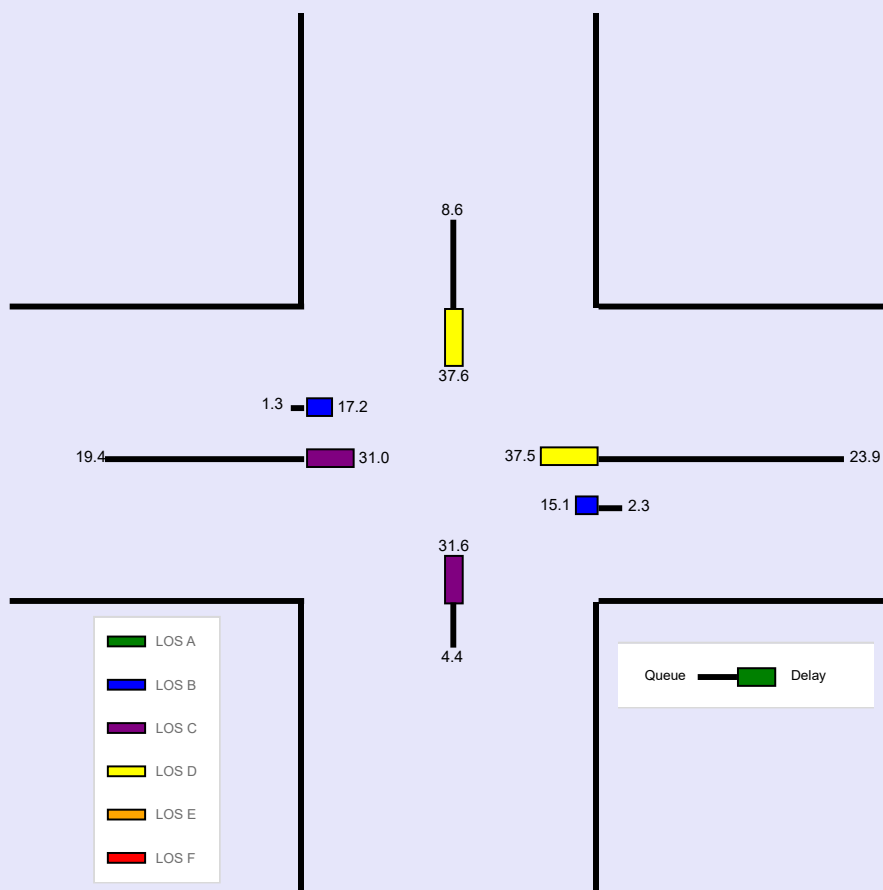
| General Information | | | | Intersection Information | |
|---------------------|-----------------------------------|---------------|-----------------------------------|--------------------------|----------|
| Agency | Compass | | | Duration, h | 0.250 |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '26 Build Existing Timings.xus | | |
| Project Description | Boundless Residential Development | | | | |



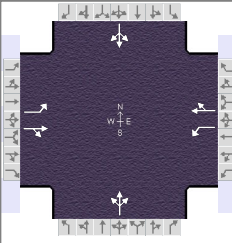






| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|-----|-----|-----|----|---|----|-----|----|----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 68 | 550 | 44 | 120 | 544 | 136 | 18 | 0 | 94 | 125 | 12 | 66 |

| Signal Information | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|-------|-----------------|-----|-------|------|-----|------|------|-----|-----|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | | | | | | | | | | | | | | | | | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | | | | | | | | | | | | | | | | | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Green | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|------|------|---|------|------|---|------|------|---|------|------|---|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 33 | 492 | | 57 | 603 | | | 110 | | | 219 | |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.3 | 19.4 | | 2.3 | 23.9 | | | 4.4 | | | 8.6 | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.21 | 0.00 | | 0.42 | 0.00 | | | 0.00 | | | 0.00 | |
| Control Delay (d), s/veh | 17.2 | 31.0 | | 15.1 | 37.5 | | | 31.6 | | | 37.6 | |
| Level of Service (LOS) | B | C | | B | D | | | C | | | D | |
| Approach Delay, s/veh / LOS | 29.6 | | C | 34.1 | | C | 31.6 | | C | 37.6 | | D |
| Intersection Delay, s/veh / LOS | 32.7 | | | | | | C | | | | | |

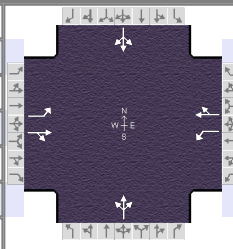


HCS Signalized Intersection Input Data

| General Information | | | | | | Intersection Information | | | | | |  | | | | | |
|--|-----------------------------------|-----------------|---------------|---|------|---|----------|---|------|--|------|---|------|---|------|--|--|
| Agency | Compass | | | | | Duration, h | 0.250 | | | | | | | | | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | | | Area Type | Other | | | | | | | | | | |
| Jurisdiction | City of Worthington | | Time Period | AM Design Hour | | PHF | 0.93 | | | | | | | | | | |
| Urban Street | SR-161 | | Analysis Year | 2026 | | Analysis Period | 1 > 7:00 | | | | | | | | | | |
| Intersection | Proprietors Rd & SR-161 | | File Name | AM '26 Build Optimized Timings.xus | | | | | | | | | | | | | |
| Project Description | Boundless Residential Development | | | | | | | | | | | | | | | | |
| Demand Information | | | | EB | | | WB | | | NB | | | SB | | | | |
| Approach Movement | | | | L | T | R | L | T | R | L | T | R | L | T | R | | |
| Demand (v), veh/h | | | | 68 | 550 | 44 | 120 | 544 | 136 | 18 | 0 | 94 | 125 | 12 | 66 | | |
| Signal Information | | | | | | | | | | | | | | | | | |
| Cycle, s | 96.0 | Reference Phase | 2 |  | |  | |  | |  | |  | |  | | | |
| Offset, s | 0 | Reference Point | End | Green | 8.6 | 1.6 | 53.3 | 17.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Traffic Information | | | | EB | | | WB | | | NB | | | SB | | | | |
| Approach Movement | | | | L | T | R | L | T | R | L | T | R | L | T | R | | |
| Demand (v), veh/h | | | | 68 | 550 | 44 | 120 | 544 | 136 | 18 | 0 | 94 | 125 | 12 | 66 | | |
| Initial Queue (Q _b), veh/h | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Base Saturation Flow Rate (s ₀), veh/h | | | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | |
| Parking (N _m), man/h | | | | None | | | None | | | None | | | None | | | | |
| Heavy Vehicles (P _{HV}), % | | | | 2 | 2 | | 1 | 1 | | | 1 | | | 2 | | | |
| Ped / Bike / RTOR, /h | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Buses (N _b), buses/h | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Arrival Type (AT) | | | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | |
| Upstream Filtering (I) | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Lane Width (W), ft | | | | 12.0 | 12.0 | | 12.0 | 12.0 | | | 12.0 | | | 12.0 | | | |
| Turn Bay Length, ft | | | | 160 | 0 | | 135 | 0 | | | 0 | | | 0 | | | |
| Grade (P _g), % | | | | | 0 | | | 0 | | | 0 | | | 0 | | | |
| Speed Limit, mi/h | | | | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | | |
| Phase Information | | | | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | | | | | | |
| Maximum Green (G _{max}) or Phase Split, s | | | | 16.0 | 41.0 | 16.0 | 41.0 | | | 39.0 | | | 39.0 | | | | |
| Yellow Change Interval (Y), s | | | | 3.2 | 4.8 | 3.9 | 4.8 | | | 4.1 | | | 4.1 | | | | |
| Red Clearance Interval (R _c), s | | | | 1.4 | 1.0 | 1.2 | 1.0 | | | 1.0 | | | 1.0 | | | | |
| Minimum Green (G _{min}), s | | | | 10 | 35 | 10 | 35 | | | 15 | | | 15 | | | | |
| Start-Up Lost Time (l _t), s | | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | | |
| Extension of Effective Green (e), s | | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | | |
| Passage (P _T), s | | | | 2.0 | 2.0 | 2.0 | 2.0 | | | 2.0 | | | 2.0 | | | | |
| Recall Mode | | | | Off | Off | Off | Off | | | Off | | | Off | | | | |
| Dual Entry | | | | No | Yes | No | Yes | | | Yes | | | Yes | | | | |
| Walk (Walk), s | | | | | 0.0 | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Pedestrian Clearance Time (P _C), s | | | | | 0.0 | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Multimodal Information | | | | EB | | | WB | | | NB | | | SB | | | | |
| 85th % Speed / Rest in Walk / Corner Radius | | | | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | | |
| Walkway / Crosswalk Width / Length, ft | | | | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | | |
| Street Width / Island / Curb, ft | | | | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | | |
| Width Outside / Bike Lane / Shoulder, ft | | | | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | | |
| Pedestrian Signal / Occupied Parking | | | | No | 0.50 | No | 0.50 | No | 0.50 | No | 0.50 | No | 0.50 | No | 0.50 | | |

HCS Signalized Intersection Results Summary

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|------------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | | |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '26 Build Optimized Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|-----------------------|----|-----|----|-----|-----|-----|----|---|----|-----|----|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 68 | 550 | 44 | 120 | 544 | 136 | 18 | 0 | 94 | 125 | 12 | 66 |

| Signal Information | | | | Signal Timing (s) | | | | | | | | Signal Phases | | | | | |
|--------------------|-------|-----------------|-----|-------------------|-----|-----|------|------|-----|-----|-----|---------------|-----|-----|-----|-----|-----|
| Cycle, s | 96.0 | Reference Phase | 2 | Green | 8.6 | 1.6 | 53.3 | 17.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Offset, s | 0 | Reference Point | End | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Uncoordinated | No | Simult. Gap E/W | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Force Mode | Fixed | Simult. Gap N/S | On | | | | | | | | | | | | | | |

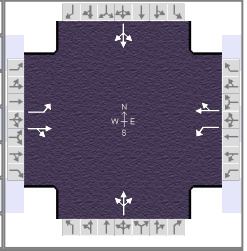
| Timer Results | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|-----------------------------------|------|------|------|------|-----|------|-----|------|
| Assigned Phase | 5 | 2 | 1 | 6 | | 8 | | 4 |
| Case Number | 1.1 | 4.0 | 1.1 | 4.0 | | 8.0 | | 8.0 |
| Phase Duration, s | 13.2 | 59.1 | 14.8 | 60.7 | | 22.1 | | 22.1 |
| Change Period, ($Y+R_c$), s | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Max Allow Headway (MAH), s | 3.1 | 0.0 | 3.1 | 0.0 | | 3.3 | | 3.3 |
| Queue Clearance Time (g_s), s | 3.5 | | 4.6 | | | 8.3 | | 16.4 |
| Green Extension Time (g_e), s | 0.1 | 0.0 | 0.2 | 0.0 | | 0.7 | | 0.7 |
| Phase Call Probability | 0.86 | | 0.97 | | | 1.00 | | 1.00 |
| Max Out Probability | 0.00 | | 0.00 | | | 0.00 | | 0.00 |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|-------|-------|----|-------|-------|----|-------|---|----|-------|---|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Assigned Movement | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Adjusted Flow Rate (v), veh/h | 73 | 639 | | 129 | 731 | | 120 | | | 218 | | |
| Adjusted Saturation Flow Rate (s), veh/h/ln | 1781 | 1846 | | 1795 | 1820 | | 1674 | | | 1417 | | |
| Queue Service Time (g_s), s | 1.5 | 22.6 | | 2.6 | 27.6 | | 0.0 | | | 8.1 | | |
| Cycle Queue Clearance Time (g_c), s | 1.5 | 22.6 | | 2.6 | 27.6 | | 6.3 | | | 14.4 | | |
| Green Ratio (g/C) | 0.64 | 0.56 | | 0.66 | 0.57 | | 0.18 | | | 0.18 | | |
| Capacity (c), veh/h | 425 | 1025 | | 511 | 1041 | | 340 | | | 312 | | |
| Volume-to-Capacity Ratio (X) | 0.172 | 0.623 | | 0.253 | 0.703 | | 0.354 | | | 0.700 | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 22 | 366 | | 39 | 423 | | 112 | | | 218 | | |
| Back of Queue (Q), veh/ln (95 th percentile) | 0.9 | 14.4 | | 1.5 | 16.8 | | 4.4 | | | 8.6 | | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.14 | 0.00 | | 0.29 | 0.00 | | 0.00 | | | 0.00 | | |
| Uniform Delay (d_1), s/veh | 10.9 | 14.5 | | 9.3 | 14.7 | | 35.1 | | | 38.3 | | |
| Incremental Delay (d_2), s/veh | 0.1 | 2.9 | | 0.1 | 4.0 | | 0.2 | | | 1.1 | | |
| Initial Queue Delay (d_3), s/veh | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | | 0.0 | | |
| Control Delay (d), s/veh | 10.9 | 17.4 | | 9.4 | 18.7 | | 35.3 | | | 39.4 | | |
| Level of Service (LOS) | B | B | | A | B | | D | | | D | | |
| Approach Delay, s/veh / LOS | 16.7 | B | | 17.3 | B | | 35.3 | D | | 39.4 | D | |
| Intersection Delay, s/veh / LOS | 20.7 | | | | | | C | | | | | |

| Multimodal Results | EB | | WB | | NB | | SB | |
|----------------------------|------|---|------|---|------|---|------|---|
| Pedestrian LOS Score / LOS | 1.66 | B | 1.66 | B | 1.94 | B | 1.94 | B |
| Bicycle LOS Score / LOS | 1.66 | B | 1.91 | B | 0.69 | A | 0.85 | A |

HCS Signalized Intersection Intermediate Values

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|------------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | | |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '26 Build Optimized Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|-----|-----|-----|----|---|----|-----|----|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 68 | 550 | 44 | 120 | 544 | 136 | 18 | 0 | 94 | 125 | 12 | 66 |

| Signal Information | | | | Signal Phases | | | | | | | | |
|--------------------|-------|-----------------|-----|---------------|-----|-----|------|------|-----|-----|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 8.6 | 1.6 | 53.3 | 17.0 | 0.0 | 0.0 | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | |

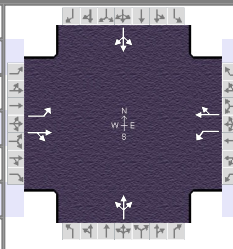
| Saturation Flow / Delay | L | T | R | L | T | R | L | T | R | L | T | R |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Width Adjustment Factor (f_w) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles and Grade Factor (f_{HVg}) | 0.984 | 0.984 | 1.000 | 0.992 | 0.992 | 1.000 | 1.000 | 0.992 | 1.000 | 1.000 | 0.984 | 1.000 |
| Parking Activity Adjustment Factor (f_p) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Bus Blockage Adjustment Factor (f_{bb}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Area Type Adjustment Factor (f_a) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Lane Utilization Adjustment Factor (f_{LU}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Adjustment Factor (f_{LT}) | 0.952 | 0.000 | | 0.952 | 0.000 | | 0.965 | 0.888 | | 0.781 | 0.757 | |
| Right-Turn Adjustment Factor (f_{RT}) | | 0.987 | 0.987 | | 0.965 | 0.965 | | 0.000 | 0.888 | | 0.000 | 0.757 |
| Left-Turn Pedestrian Adjustment Factor (f_{LPB}) | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 | | |
| Right-Turn Ped-Bike Adjustment Factor (f_{RPB}) | | | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 |
| Work Zone Adjustment Factor (f_{WZ}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| DDI Factor (f_{DDI}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$) | 1.00 | | | 1.00 | | | | | | | | |
| Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$) | | | | | | | 1.00 | | | 1.00 | | |
| Movement Saturation Flow Rate (s), veh/h | 1781 | 1709 | 137 | 1795 | 1456 | 364 | 269 | 0 | 1405 | 872 | 84 | 461 |
| Proportion of Vehicles Arriving on Green (P) | 0.09 | 0.56 | 0.56 | 0.10 | 0.57 | 0.57 | 0.18 | 0.00 | 0.18 | 0.18 | 0.18 | 0.18 |
| Incremental Delay Factor (k) | 0.04 | 0.50 | | 0.04 | 0.50 | | | 0.04 | | | 0.04 | |

| Signal Timing / Movement Groups | EBL | EBT/R | WBL | WBT/R | NBL | NBT/R | SBL | SBT/R |
|---|------|-------|------|-------|-----|-------|-----|-------|
| Lost Time (t_L) | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Green Ratio (g/C) | 0.64 | 0.56 | 0.66 | 0.57 | | 0.18 | | 0.18 |
| Permitted Saturation Flow Rate (s_p), veh/h/ln | 725 | 0 | 796 | 0 | | 1335 | | 1314 |
| Shared Saturation Flow Rate (s_{sh}), veh/h/ln | | | | | | 1765 | | 1412 |
| Permitted Effective Green Time (g_p), s | 53.3 | 0.0 | 53.3 | 0.0 | | 17.0 | | 17.0 |
| Permitted Service Time (g_u), s | 25.3 | 0.0 | 30.7 | 0.0 | | 2.7 | | 10.7 |
| Permitted Queue Service Time (g_{ps}), s | 3.1 | | 4.4 | | | 0.0 | | 8.1 |
| Time to First Blockage (g_t), s | 0.0 | 0.0 | 0.0 | 0.0 | | 7.7 | | 0.5 |
| Queue Service Time Before Blockage (g_{fs}), s | | | | | | 0.1 | | 0.5 |
| Protected Right Saturation Flow (s_R), veh/h/ln | | | | | | | | |
| Protected Right Effective Green Time (g_R), s | | | | | | | | |

| Multimodal | EB | | WB | | NB | | SB | |
|----------------------------------|---------|-------|---------|-------|--------|-------|--------|-------|
| Pedestrian F_w / F_v | 0.972 | 0.000 | 0.972 | 0.000 | 1.198 | 0.000 | 1.198 | 0.000 |
| Pedestrian F_s / F_{delay} | 0.000 | 0.090 | 0.000 | 0.087 | 0.000 | 0.140 | 0.000 | 0.140 |
| Pedestrian M_{corner} / M_{cw} | 0.00 | | 0.00 | | 0.00 | | 0.00 | |
| Bicycle c_b / d_b | 1110.48 | 9.49 | 1143.87 | 8.80 | 354.53 | 32.49 | 354.53 | 32.49 |
| Bicycle F_w / F_v | -3.64 | 1.17 | -3.64 | 1.42 | -3.64 | 0.20 | -3.64 | 0.36 |

HCS Signalized Intersection Results Graphical Summary

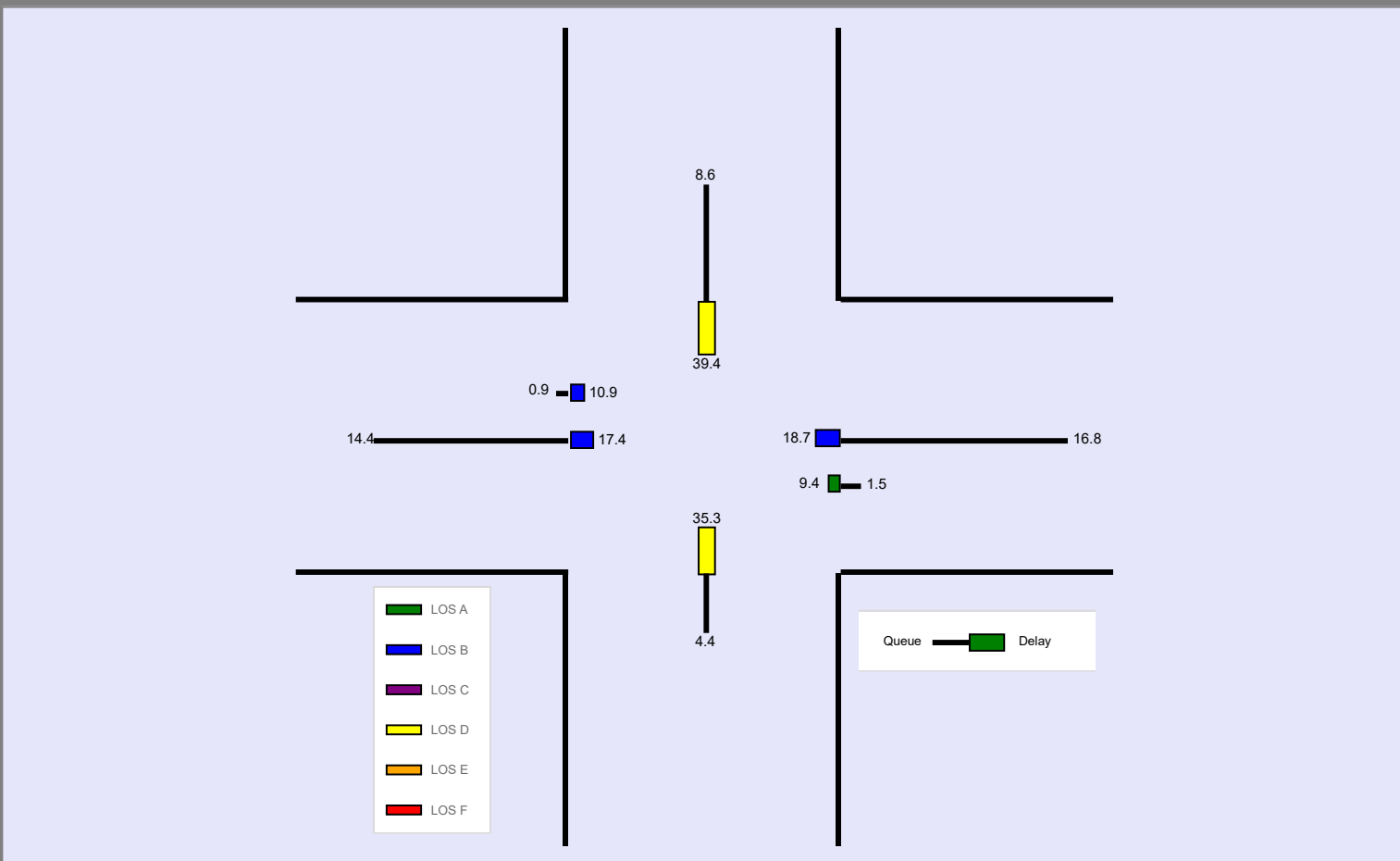
| General Information | | | | Intersection Information | |
|---------------------|-----------------------------------|---------------|------------------------------------|--------------------------|----------|
| Agency | Compass | | | Duration, h | 0.250 |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '26 Build Optimized Timings.xus | | |
| Project Description | Boundless Residential Development | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|-----|-----|-----|----|---|----|-----|----|----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 68 | 550 | 44 | 120 | 544 | 136 | 18 | 0 | 94 | 125 | 12 | 66 |

| Signal Information | | | | Signal Phases | | | | | | | | | |
|--------------------|-------|-----------------|-----|---------------|-----|-----|------|------|-----|-----|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 8.6 | 1.6 | 53.3 | 17.0 | 0.0 | 0.0 | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | | |
|---|------|------|---|------|------|---|------|------|---|----|------|---|---|
| | L | T | R | L | T | R | L | T | R | L | T | R | |
| Approach Movement | | | | | | | | | | | | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 22 | 366 | | 39 | 423 | | | 112 | | | 218 | | |
| Back of Queue (Q), veh/ln (95 th percentile) | 0.9 | 14.4 | | 1.5 | 16.8 | | | 4.4 | | | 8.6 | | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.14 | 0.00 | | 0.29 | 0.00 | | | 0.00 | | | 0.00 | | |
| Control Delay (d), s/veh | 10.9 | 17.4 | | 9.4 | 18.7 | | | 35.3 | | | 39.4 | | |
| Level of Service (LOS) | B | B | | A | B | | | D | | | D | | |
| Approach Delay, s/veh / LOS | 16.7 | | B | 17.3 | | B | 35.3 | | D | | 39.4 | | D |
| Intersection Delay, s/veh / LOS | 20.7 | | | | | | C | | | | | | |

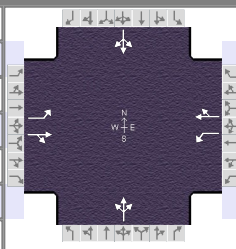


Section 3

AM Horizon Year

HCS Signalized Intersection Input Data

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '36 Bck Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|----|-----|-----|----|---|----|-----|---|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 70 | 572 | 30 | 84 | 566 | 142 | 5 | 0 | 25 | 138 | 9 | 72 |

| Signal Information | | | | Signal Phases | | | | | | | | | |
|--------------------|-------|-----------------|-----|---------------|-----|------|------|-----|-----|--|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | | | | | | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | | | | | | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | | | | | | | | | | |
| | | Green | | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | | | | |
| | | Yellow | | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | | |
| | | Red | | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | |

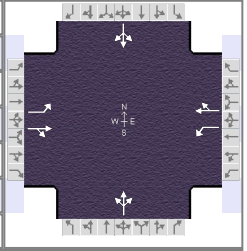
| Traffic Information | EB | | | WB | | | NB | | | SB | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 70 | 572 | 30 | 84 | 566 | 142 | 5 | 0 | 25 | 138 | 9 | 72 |
| Initial Queue (Q _b), veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Base Saturation Flow Rate (s ₀), veh/h | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Parking (N _m), man/h | None | | | None | | | None | | | None | | |
| Heavy Vehicles (P _{HV}), % | 2 | 2 | | 1 | 1 | | | 1 | | | 2 | |
| Ped / Bike / RTOR, /h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buses (N _b), buses/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arrival Type (AT) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Upstream Filtering (I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lane Width (W), ft | 12.0 | 12.0 | | 12.0 | 12.0 | | | 12.0 | | | 12.0 | |
| Turn Bay Length, ft | 160 | 0 | | 135 | 0 | | | 0 | | | 0 | |
| Grade (P _g), % | | 0 | | | 0 | | | 0 | | | 0 | |
| Speed Limit, mi/h | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |

| Phase Information | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|--|------|------|------|------|-----|------|-----|------|
| Maximum Green (G _{max}) or Phase Split, s | 18.6 | 47.8 | 20.1 | 49.3 | | 28.1 | | 28.1 |
| Yellow Change Interval (Y), s | 3.2 | 4.8 | 3.9 | 4.8 | | 4.1 | | 4.1 |
| Red Clearance Interval (R _c), s | 1.4 | 1.0 | 1.2 | 1.0 | | 1.0 | | 1.0 |
| Minimum Green (G _{min}), s | 10 | 35 | 10 | 35 | | 15 | | 15 |
| Start-Up Lost Time (l _t), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Extension of Effective Green (e), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Passage (P _T), s | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | | 2.0 |
| Recall Mode | Max | Max | Max | Max | | Max | | Max |
| Dual Entry | No | Yes | No | Yes | | Yes | | Yes |
| Walk (Walk), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |
| Pedestrian Clearance Time (P _C), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |

| Multimodal Information | EB | | | WB | | | NB | | | SB | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| 85th % Speed / Rest in Walk / Corner Radius | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 |
| Walkway / Crosswalk Width / Length, ft | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 |
| Street Width / Island / Curb, ft | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No |
| Width Outside / Bike Lane / Shoulder, ft | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 |
| Pedestrian Signal / Occupied Parking | No | 0.50 | | No | 0.50 | | No | 0.50 | | No | 0.50 | |

HCS Signalized Intersection Results Summary

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '36 Bck Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|----|-----|-----|----|---|----|-----|---|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 70 | 572 | 30 | 84 | 566 | 142 | 5 | 0 | 25 | 138 | 9 | 72 |

| Signal Information | | | | Signal Timing (s) | | | | | | | | Signal Phases | | | |
|--------------------|-------|-----------------|-----|-------------------|------|-----|------|------|-----|-----|---|---------------|---|---|--|
| Cycle, s | 96.0 | Reference Phase | 2 | Green | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | 1 | 2 | 3 | 4 | |
| Offset, s | 0 | Reference Point | End | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | 5 | 6 | 7 | 8 | |
| Uncoordinated | No | Simult. Gap E/W | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | | | | | | | | | | | | |

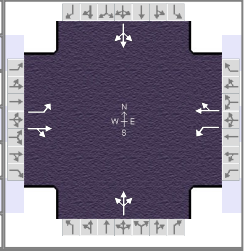
| Timer Results | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|--|------|------|------|------|-----|------|-----|------|
| Assigned Phase | 5 | 2 | 1 | 6 | | 8 | | 4 |
| Case Number | 1.1 | 4.0 | 1.1 | 4.0 | | 8.0 | | 8.0 |
| Phase Duration, s | 18.6 | 47.8 | 20.1 | 49.3 | | 28.1 | | 28.1 |
| Change Period, (Y+R _c), s | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Max Allow Headway (MAH), s | 3.1 | 0.0 | 3.1 | 0.0 | | 3.2 | | 3.2 |
| Queue Clearance Time (g _s), s | 3.8 | | 4.1 | | | 3.5 | | 15.8 |
| Green Extension Time (g _e), s | 0.1 | 0.0 | 0.1 | 0.0 | | 0.5 | | 0.3 |
| Phase Call Probability | 1.00 | | 1.00 | | | 1.00 | | 1.00 |
| Max Out Probability | 0.00 | | 0.00 | | | 0.00 | | 0.03 |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|--|-------|-------|----|-------|-------|----|-------|---|----|-------|---|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Assigned Movement | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Adjusted Flow Rate (v), veh/h | 75 | 647 | | 90 | 761 | | 32 | | | 235 | | |
| Adjusted Saturation Flow Rate (s), veh/h/ln | 1781 | 1854 | | 1795 | 1819 | | 1627 | | | 1475 | | |
| Queue Service Time (g _s), s | 1.8 | 29.0 | | 2.1 | 37.8 | | 0.0 | | | 12.3 | | |
| Cycle Queue Clearance Time (g _c), s | 1.8 | 29.0 | | 2.1 | 37.8 | | 1.5 | | | 13.8 | | |
| Green Ratio (g/C) | 0.58 | 0.44 | | 0.59 | 0.45 | | 0.24 | | | 0.24 | | |
| Capacity (c), veh/h | 362 | 811 | | 463 | 824 | | 434 | | | 414 | | |
| Volume-to-Capacity Ratio (X) | 0.208 | 0.798 | | 0.195 | 0.923 | | 0.074 | | | 0.568 | | |
| Back of Queue (Q), ft/ln (85 th percentile) | 35 | 445 | | 38 | 594 | | 27 | | | 199 | | |
| Back of Queue (Q), veh/ln (85 th percentile) | 1.4 | 17.5 | | 1.5 | 23.6 | | 1.1 | | | 7.9 | | |
| Queue Storage Ratio (RQ) (85 th percentile) | 0.22 | 0.00 | | 0.29 | 0.00 | | 0.00 | | | 0.00 | | |
| Uniform Delay (d ₁), s/veh | 17.2 | 23.3 | | 13.3 | 24.7 | | 28.3 | | | 32.9 | | |
| Incremental Delay (d ₂), s/veh | 1.3 | 8.1 | | 0.9 | 17.5 | | 0.3 | | | 5.6 | | |
| Initial Queue Delay (d ₃), s/veh | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | | 0.0 | | |
| Control Delay (d), s/veh | 18.5 | 31.4 | | 14.2 | 42.1 | | 28.6 | | | 38.5 | | |
| Level of Service (LOS) | B | C | | B | D | | C | | | D | | |
| Approach Delay, s/veh / LOS | 30.1 | C | | 39.2 | D | | 28.6 | C | | 38.5 | D | |
| Intersection Delay, s/veh / LOS | 35.3 | | | | | | D | | | | | |

| Multimodal Results | EB | | WB | | NB | | SB | |
|----------------------------|------|---|------|---|------|---|------|---|
| Pedestrian LOS Score / LOS | 1.68 | B | 1.68 | B | 1.93 | B | 1.93 | B |
| Bicycle LOS Score / LOS | 1.68 | B | 1.89 | B | 0.54 | A | 0.88 | A |

HCS Signalized Intersection Intermediate Values

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '36 Bck Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|--------------------|----|-----|----|----|-----|-----|----|---|----|-----|---|----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 70 | 572 | 30 | 84 | 566 | 142 | 5 | 0 | 25 | 138 | 9 | 72 |

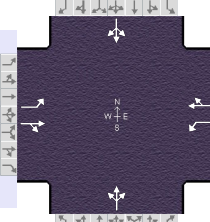
| Signal Information | | | | Signal Phases | | | | | | | | | | | | | | | | | | | | |
|--------------------|-------|-----------------|-----|---------------|------|-----|------|------|-----|-----|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | | | | | | | | | | | | | | | | | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | | | | | | | | | | | | | | | | | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Green | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 |

| Saturation Flow / Delay | L | T | R | L | T | R | L | T | R | L | T | R |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Width Adjustment Factor (f_w) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles and Grade Factor (f_{HVg}) | 0.984 | 0.984 | 1.000 | 0.992 | 0.992 | 1.000 | 1.000 | 0.992 | 1.000 | 1.000 | 0.984 | 1.000 |
| Parking Activity Adjustment Factor (f_p) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Bus Blockage Adjustment Factor (f_{bb}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Area Type Adjustment Factor (f_a) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Lane Utilization Adjustment Factor (f_{LU}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Adjustment Factor (f_{LT}) | 0.952 | 0.000 | | 0.952 | 0.000 | | 0.959 | 0.863 | | 0.826 | 0.788 | |
| Right-Turn Adjustment Factor (f_{RT}) | | 0.991 | 0.991 | | 0.965 | 0.965 | | 0.000 | 0.863 | | 0.000 | 0.788 |
| Left-Turn Pedestrian Adjustment Factor (f_{LPB}) | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 | | |
| Right-Turn Ped-Bike Adjustment Factor (f_{RPB}) | | | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 |
| Work Zone Adjustment Factor (f_{wz}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| DDI Factor (f_{DDI}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$) | 1.00 | | | 1.00 | | | | | | | | |
| Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$) | | | | | | | 1.00 | | | 1.00 | | |
| Movement Saturation Flow Rate (s), veh/h | 1781 | 1761 | 92 | 1795 | 1455 | 365 | 271 | 0 | 1356 | 929 | 61 | 485 |
| Proportion of Vehicles Arriving on Green (P) | 0.15 | 0.44 | 0.44 | 0.16 | 0.45 | 0.45 | 0.24 | 0.00 | 0.24 | 0.24 | 0.24 | 0.24 |
| Incremental Delay Factor (k) | 0.50 | 0.50 | | 0.50 | 0.50 | | | 0.50 | | | 0.50 | |

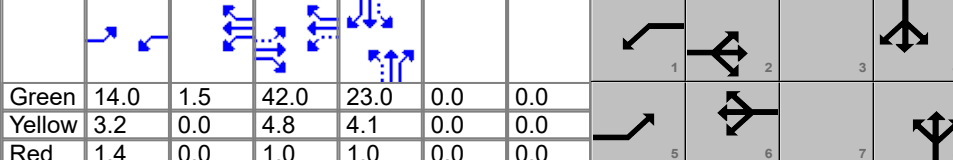
| Signal Timing / Movement Groups | EBL | EBT/R | WBL | WBT/R | NBL | NBT/R | SBL | SBT/R |
|---|------|-------|------|-------|-----|-------|-----|-------|
| Lost Time (t_L) | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Green Ratio (g/C) | 0.58 | 0.44 | 0.59 | 0.45 | | 0.24 | | 0.24 |
| Permitted Saturation Flow Rate (s_p), veh/h/ln | 705 | 0 | 790 | 0 | | 1331 | | 1405 |
| Shared Saturation Flow Rate (s_{sh}), veh/h/ln | | | | | | 1760 | | 1531 |
| Permitted Effective Green Time (g_p), s | 42.0 | 0.0 | 42.0 | 0.0 | | 23.0 | | 23.0 |
| Permitted Service Time (g_u), s | 3.7 | 0.0 | 13.0 | 0.0 | | 9.2 | | 21.5 |
| Permitted Queue Service Time (g_{ps}), s | 3.7 | | 3.7 | | | 0.0 | | 12.3 |
| Time to First Blockage (g_t), s | 0.0 | 0.0 | 0.0 | 0.0 | | 8.8 | | 1.0 |
| Queue Service Time Before Blockage (g_{fs}), s | | | | | | 0.2 | | 1.0 |
| Protected Right Saturation Flow (s_R), veh/h/ln | | | | | | | | |
| Protected Right Effective Green Time (g_R), s | | | | | | | | |

| Multimodal | EB | | WB | | NB | | SB | |
|----------------------------------|--------|-------|--------|-------|--------|-------|--------|-------|
| Pedestrian F_w / F_v | 0.972 | 0.000 | 0.972 | 0.000 | 1.198 | 0.000 | 1.198 | 0.000 |
| Pedestrian F_s / F_{delay} | 0.000 | 0.109 | 0.000 | 0.107 | 0.000 | 0.133 | 0.000 | 0.133 |
| Pedestrian M_{corner} / M_{cw} | 0.00 | | 0.00 | | 0.00 | | 0.00 | |
| Bicycle c_b / d_b | 875.00 | 15.19 | 906.25 | 14.36 | 479.17 | 27.76 | 479.17 | 27.76 |
| Bicycle F_w / F_v | -3.64 | 1.19 | -3.64 | 1.41 | -3.64 | 0.05 | -3.64 | 0.39 |

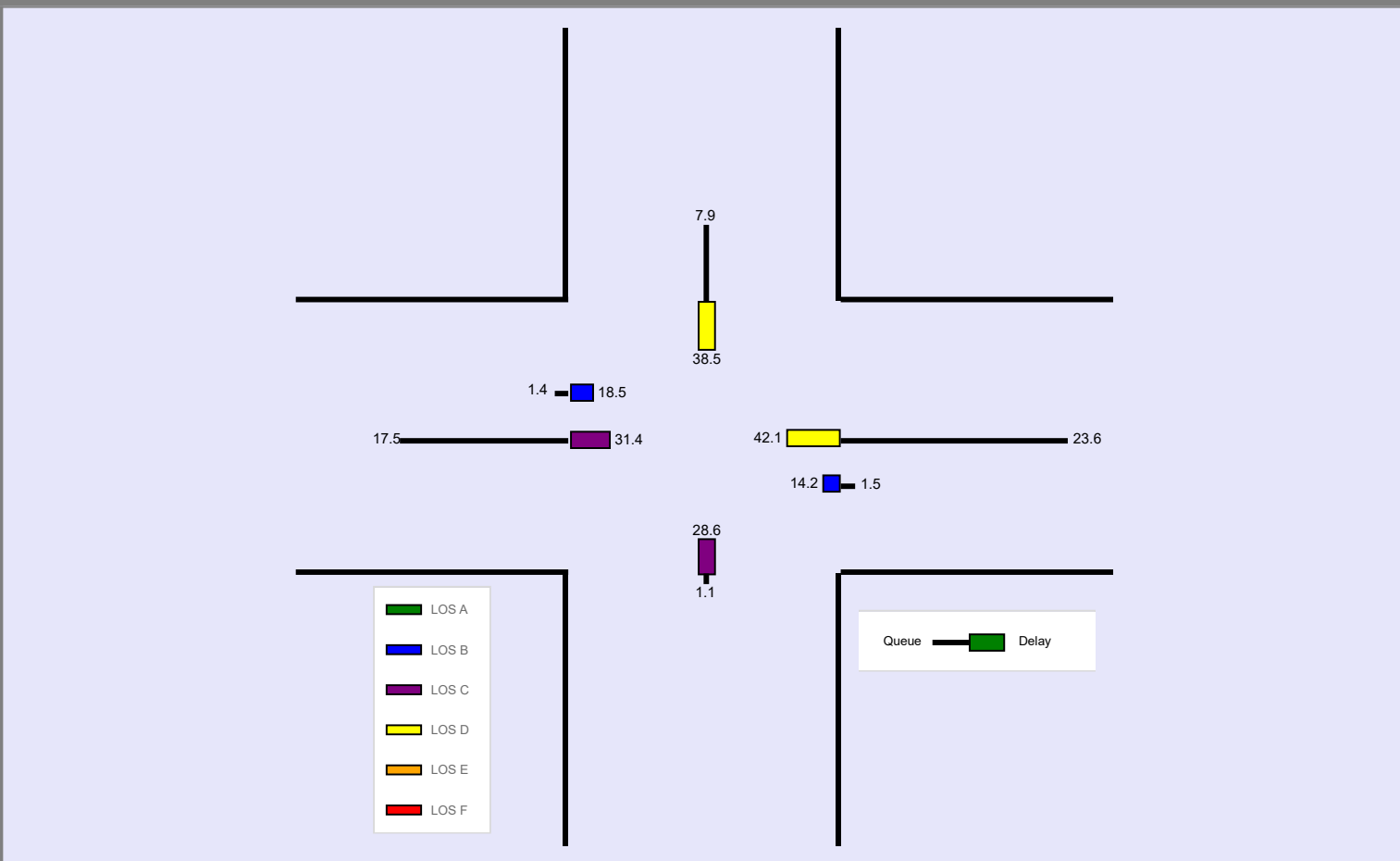
HCS Signalized Intersection Results Graphical Summary

| General Information | | | | Intersection Information | |  |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|---|
| Agency | Compass | | | Duration, h | 0.250 | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '36 Bck Existing Timings.xus | | | |
| Project Description | Boundless Residential Development | | | | | |

| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|----|-----|-----|----|---|----|-----|---|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 70 | 572 | 30 | 84 | 566 | 142 | 5 | 0 | 25 | 138 | 9 | 72 |

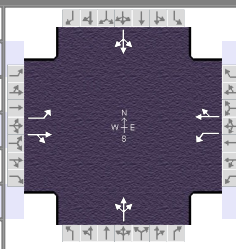
| Signal Information | | | |  | | | | | | | | | | | | | | | | | | | | |
|--------------------|-------|-----------------|-----|--|------|-----|------|------|-----|-----|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cycle, s | 96.0 | Reference Phase | 2 | Green | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 |
| Offset, s | 0 | Reference Point | End | | | | | | | | | | | | | | | | | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | | | | | | | | | | | | | | | | | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | | | | | | | | | | | | | | | | | | | | | |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|----------|------|---|----------|------|---|----------|------|---|----------|---|------|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Back of Queue (Q), ft/ln (85 th percentile) | 35 | 445 | | 38 | 594 | | | 27 | | | | 199 |
| Back of Queue (Q), veh/ln (85 th percentile) | 1.4 | 17.5 | | 1.5 | 23.6 | | | 1.1 | | | | 7.9 |
| Queue Storage Ratio (RQ) (85 th percentile) | 0.22 | 0.00 | | 0.29 | 0.00 | | | 0.00 | | | | 0.00 |
| Control Delay (d), s/veh | 18.5 | 31.4 | | 14.2 | 42.1 | | | 28.6 | | | | 38.5 |
| Level of Service (LOS) | B | C | | B | D | | | C | | | | D |
| Approach Delay, s/veh / LOS | 30.1 / C | | | 39.2 / D | | | 28.6 / C | | | 38.5 / D | | |
| Intersection Delay, s/veh / LOS | 35.3 | | | | | | D | | | | | |



HCS Signalized Intersection Input Data

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|-----------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '36 Build Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|--------------------|----|-----|----|-----|-----|-----|----|---|----|-----|----|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 70 | 572 | 45 | 124 | 566 | 142 | 18 | 0 | 95 | 138 | 13 | 72 |

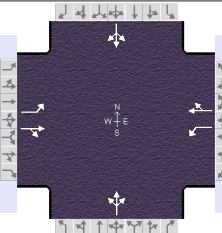
| Signal Information | | | | Signal Phases | | | | | | | | |
|--------------------|-------|-----------------|-----|---------------|------|-----|------|------|-----|-----|-----|-----|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Traffic Information | EB | | | WB | | | NB | | | SB | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 70 | 572 | 45 | 124 | 566 | 142 | 18 | 0 | 95 | 138 | 13 | 72 |
| Initial Queue (Q _b), veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Base Saturation Flow Rate (s ₀), veh/h | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Parking (N _m), man/h | None | | | None | | | None | | | None | | |
| Heavy Vehicles (P _{HV}), % | 2 | 2 | | 1 | 1 | | | 1 | | | 2 | |
| Ped / Bike / RTOR, /h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buses (N _b), buses/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arrival Type (AT) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Upstream Filtering (I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lane Width (W), ft | 12.0 | 12.0 | | 12.0 | 12.0 | | | 12.0 | | | 12.0 | |
| Turn Bay Length, ft | 160 | 0 | | 135 | 0 | | | 0 | | | 0 | |
| Grade (P _g), % | | 0 | | | 0 | | | 0 | | | 0 | |
| Speed Limit, mi/h | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |

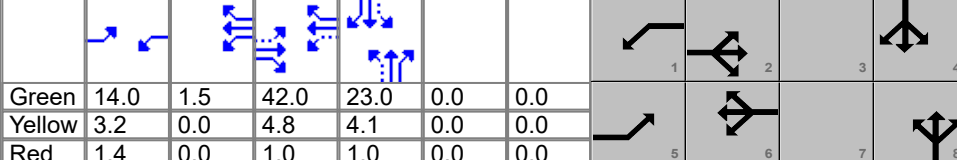
| Phase Information | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|------|------|------|------|-----|------|-----|------|
| Maximum Green (G _{max}) or Phase Split, s | 18.6 | 47.8 | 20.1 | 49.3 | | 28.1 | | 28.1 |
| Yellow Change Interval (Y), s | 3.2 | 4.8 | 3.9 | 4.8 | | 4.1 | | 4.1 |
| Red Clearance Interval (R _c), s | 1.4 | 1.0 | 1.2 | 1.0 | | 1.0 | | 1.0 |
| Minimum Green (G _{min}), s | 10 | 35 | 10 | 35 | | 15 | | 15 |
| Start-Up Lost Time (I _t), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Extension of Effective Green (e), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Passage (PT), s | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | | 2.0 |
| Recall Mode | Max | Max | Max | Max | | Max | | Max |
| Dual Entry | No | Yes | No | Yes | | Yes | | Yes |
| Walk (Walk), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |
| Pedestrian Clearance Time (PC), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |

| Multimodal Information | EB | | | WB | | | NB | | | SB | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| 85th % Speed / Rest in Walk / Corner Radius | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 |
| Walkway / Crosswalk Width / Length, ft | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 |
| Street Width / Island / Curb, ft | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No |
| Width Outside / Bike Lane / Shoulder, ft | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 |
| Pedestrian Signal / Occupied Parking | No | 0.50 | | No | 0.50 | | No | 0.50 | | No | 0.50 | |

HCS Signalized Intersection Results Summary

| General Information | | | | Intersection Information | |  |
|---------------------|-----------------------------------|---------------|-----------------------------------|--------------------------|----------|---|
| Agency | Compass | | | Duration, h | 0.250 | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '36 Build Existing Timings.xus | | | |
| Project Description | Boundless Residential Development | | | | | |

| Demand Information | EB | | | WB | | | NB | | | SB | | |
|-----------------------|----|-----|----|-----|-----|-----|----|---|----|-----|----|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 70 | 572 | 45 | 124 | 566 | 142 | 18 | 0 | 95 | 138 | 13 | 72 |

| Signal Information | | | |  | | | | | | | | | | | | | | |
|--------------------|------|-----------------|-----|--|------|-----|------|------|-----|-----|---------------|-----|-----------------|-----|------------|-------|-----------------|----|
| Cycle, s | 96.0 | Reference Phase | 2 | Green | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | |
| Offset, s | 0 | Reference Point | End | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | Uncoordinated | No | Simult. Gap E/W | On | Force Mode | Fixed | Simult. Gap N/S | On |

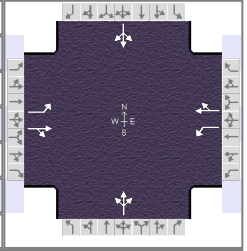
| Timer Results | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|-----------------------------------|------|------|------|------|-----|------|-----|------|
| Assigned Phase | 5 | 2 | 1 | 6 | | 8 | | 4 |
| Case Number | 1.1 | 4.0 | 1.1 | 4.0 | | 8.0 | | 8.0 |
| Phase Duration, s | 18.6 | 47.8 | 20.1 | 49.3 | | 28.1 | | 28.1 |
| Change Period, ($Y+R_c$), s | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Max Allow Headway (MAH), s | 3.1 | 0.0 | 3.1 | 0.0 | | 3.3 | | 3.3 |
| Queue Clearance Time (g_s), s | 3.8 | | 5.1 | | | 7.9 | | 16.5 |
| Green Extension Time (g_e), s | 0.1 | 0.0 | 0.1 | 0.0 | | 0.7 | | 0.5 |
| Phase Call Probability | 1.00 | | 1.00 | | | 1.00 | | 1.00 |
| Max Out Probability | 0.00 | | 0.00 | | | 0.00 | | 0.11 |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|-------|-------|----|-------|-------|----|----|-------|----|----|-------|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Assigned Movement | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Adjusted Flow Rate (v), veh/h | 75 | 663 | | 133 | 761 | | | 122 | | | 240 | |
| Adjusted Saturation Flow Rate (s), veh/h/ln | 1781 | 1846 | | 1795 | 1819 | | | 1633 | | | 1430 | |
| Queue Service Time (g_s), s | 1.8 | 30.3 | | 3.1 | 37.8 | | | 0.0 | | | 8.6 | |
| Cycle Queue Clearance Time (g_c), s | 1.8 | 30.3 | | 3.1 | 37.8 | | | 5.9 | | | 14.5 | |
| Green Ratio (g/C) | 0.58 | 0.44 | | 0.59 | 0.45 | | | 0.24 | | | 0.24 | |
| Capacity (c), veh/h | 362 | 808 | | 450 | 824 | | | 435 | | | 403 | |
| Volume-to-Capacity Ratio (X) | 0.208 | 0.821 | | 0.296 | 0.923 | | | 0.280 | | | 0.594 | |
| Back of Queue (Q), ft/ln (85 th percentile) | 35 | 466 | | 60 | 594 | | | 103 | | | 206 | |
| Back of Queue (Q), veh/ln (85 th percentile) | 1.4 | 18.3 | | 2.4 | 23.6 | | | 4.1 | | | 8.1 | |
| Queue Storage Ratio (RQ) (85 th percentile) | 0.22 | 0.00 | | 0.44 | 0.00 | | | 0.00 | | | 0.00 | |
| Uniform Delay (d_1), s/veh | 17.2 | 23.7 | | 14.3 | 24.7 | | | 30.0 | | | 33.1 | |
| Incremental Delay (d_2), s/veh | 1.3 | 9.2 | | 1.7 | 17.5 | | | 1.6 | | | 6.3 | |
| Initial Queue Delay (d_3), s/veh | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | | 0.0 | |
| Control Delay (d), s/veh | 18.5 | 32.9 | | 16.0 | 42.1 | | | 31.6 | | | 39.4 | |
| Level of Service (LOS) | B | C | | B | D | | | C | | | D | |
| Approach Delay, s/veh / LOS | 31.4 | C | | 38.2 | D | | | 31.6 | C | | 39.4 | D |
| Intersection Delay, s/veh / LOS | 35.5 | | | | | | D | | | | | |

| Multimodal Results | EB | | WB | | NB | | SB | |
|----------------------------|------|---|------|---|------|---|------|---|
| Pedestrian LOS Score / LOS | 1.68 | B | 1.68 | B | 1.93 | B | 1.93 | B |
| Bicycle LOS Score / LOS | 1.71 | B | 1.96 | B | 0.69 | A | 0.88 | A |

HCS Signalized Intersection Intermediate Values

| General Information | | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|-----------------------------------|-------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | | PHF | 0.93 | | |
| Urban Street | SR-161 | Analysis Year | 2036 | | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '36 Build Existing Timings.xus | | | | | |
| Project Description | Boundless Residential Development | | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|--------------------|----|-----|----|-----|-----|-----|----|---|----|-----|----|----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 70 | 572 | 45 | 124 | 566 | 142 | 18 | 0 | 95 | 138 | 13 | 72 |

| Signal Information | | | | Signal Phases | | | | | | | | |
|--------------------|-------|-----------------|-----|---------------|------|-----|------|------|-----|-----|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | |

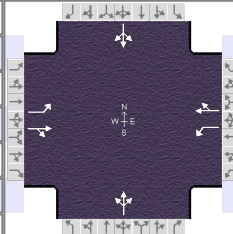
| Saturation Flow / Delay | L | T | R | L | T | R | L | T | R | L | T | R |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Width Adjustment Factor (f_w) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles and Grade Factor (f_{HVg}) | 0.984 | 0.984 | 1.000 | 0.992 | 0.992 | 1.000 | 1.000 | 0.992 | 1.000 | 1.000 | 0.984 | 1.000 |
| Parking Activity Adjustment Factor (f_p) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Bus Blockage Adjustment Factor (f_{bb}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Area Type Adjustment Factor (f_a) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Lane Utilization Adjustment Factor (f_{LU}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Adjustment Factor (f_{LT}) | 0.952 | 0.000 | | 0.952 | 0.000 | | 0.961 | 0.866 | | 0.792 | 0.765 | |
| Right-Turn Adjustment Factor (f_{RT}) | | 0.987 | 0.987 | | 0.965 | 0.965 | | 0.000 | 0.866 | | 0.000 | 0.765 |
| Left-Turn Pedestrian Adjustment Factor (f_{LPB}) | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 | | |
| Right-Turn Ped-Bike Adjustment Factor (f_{RPB}) | | | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 |
| Work Zone Adjustment Factor (f_{WZ}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| DDI Factor (f_{DDI}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$) | 1.00 | | | 1.00 | | | | | | | | |
| Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$) | | | | | | | 1.00 | | | 1.00 | | |
| Movement Saturation Flow Rate (s), veh/h | 1781 | 1711 | 135 | 1795 | 1455 | 365 | 260 | 0 | 1373 | 885 | 83 | 462 |
| Proportion of Vehicles Arriving on Green (P) | 0.15 | 0.44 | 0.44 | 0.16 | 0.45 | 0.45 | 0.24 | 0.00 | 0.24 | 0.24 | 0.24 | 0.24 |
| Incremental Delay Factor (k) | 0.50 | 0.50 | | 0.50 | 0.50 | | | 0.50 | | | 0.50 | |

| Signal Timing / Movement Groups | EBL | EBT/R | WBL | WBT/R | NBL | NBT/R | SBL | SBT/R |
|---|------|-------|------|-------|-----|-------|-----|-------|
| Lost Time (t_L) | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Green Ratio (g/C) | 0.58 | 0.44 | 0.59 | 0.45 | | 0.24 | | 0.24 |
| Permitted Saturation Flow Rate (s_p), veh/h/ln | 705 | 0 | 778 | 0 | | 1326 | | 1313 |
| Shared Saturation Flow Rate (s_{sh}), veh/h/ln | | | | | | 1763 | | 1465 |
| Permitted Effective Green Time (g_p), s | 42.0 | 0.0 | 42.0 | 0.0 | | 23.0 | | 23.0 |
| Permitted Service Time (g_u), s | 3.7 | 0.0 | 11.7 | 0.0 | | 8.5 | | 17.1 |
| Permitted Queue Service Time (g_{ps}), s | 3.7 | | 6.3 | | | 0.0 | | 8.6 |
| Time to First Blockage (g_t), s | 0.0 | 0.0 | 0.0 | 0.0 | | 9.1 | | 1.0 |
| Queue Service Time Before Blockage (g_{fs}), s | | | | | | 0.1 | | 1.0 |
| Protected Right Saturation Flow (s_R), veh/h/ln | | | | | | | | |
| Protected Right Effective Green Time (g_R), s | | | | | | | | |

| Multimodal | EB | | WB | | NB | | SB | |
|----------------------------------|--------|-------|--------|-------|--------|-------|--------|-------|
| Pedestrian F_w / F_v | 0.972 | 0.000 | 0.972 | 0.000 | 1.198 | 0.000 | 1.198 | 0.000 |
| Pedestrian F_s / F_{delay} | 0.000 | 0.109 | 0.000 | 0.107 | 0.000 | 0.133 | 0.000 | 0.133 |
| Pedestrian M_{corner} / M_{cw} | 0.00 | | 0.00 | | 0.00 | | 0.00 | |
| Bicycle c_b / d_b | 875.00 | 15.19 | 906.25 | 14.36 | 479.17 | 27.76 | 479.17 | 27.76 |
| Bicycle F_w / F_v | -3.64 | 1.22 | -3.64 | 1.48 | -3.64 | 0.20 | -3.64 | 0.40 |

HCS Signalized Intersection Results Graphical Summary

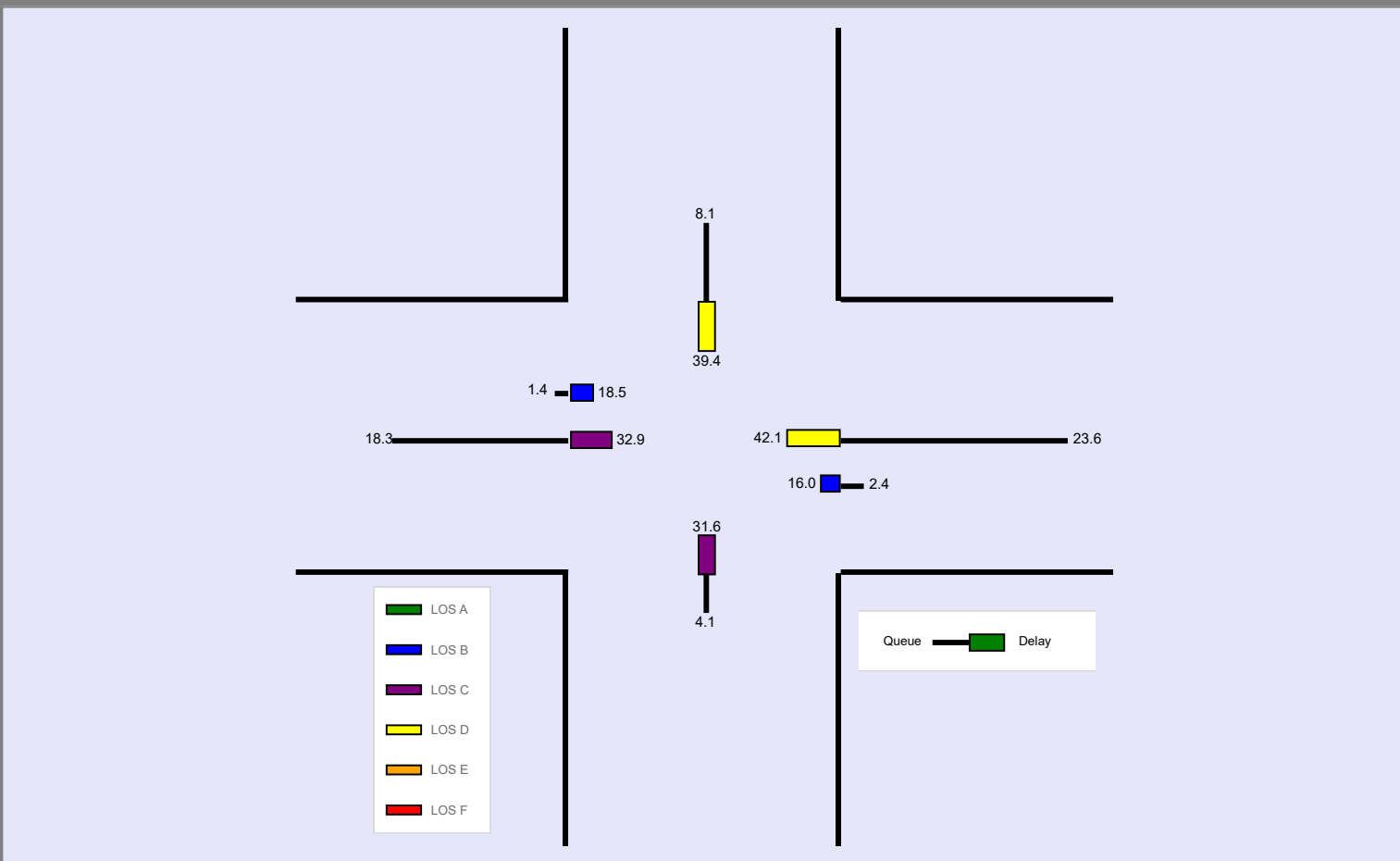
| General Information | | | | Intersection Information | |
|---------------------|-----------------------------------|---------------|-----------------------------------|--------------------------|----------|
| Agency | Compass | | | Duration, h | 0.250 |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '36 Build Existing Timings.xus | | |
| Project Description | Boundless Residential Development | | | | |



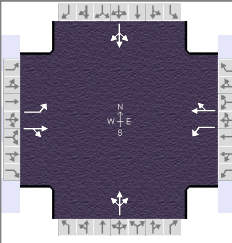
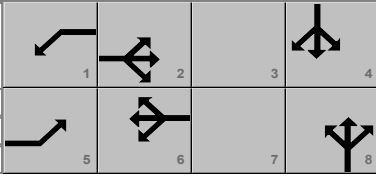
| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|-----|-----|-----|----|---|----|-----|----|----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 70 | 572 | 45 | 124 | 566 | 142 | 18 | 0 | 95 | 138 | 13 | 72 |

| Signal Information | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|-------|-----------------|-----|-------|------|-----|------|------|-----|-----|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | | | | | | | | | | | | | | | | | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | | | | | | | | | | | | | | | | | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Green | 14.0 | 1.5 | 42.0 | 23.0 | 0.0 | 0.0 | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|------|------|---|------|------|---|------|------|---|------|------|---|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Back of Queue (Q), ft/ln (85 th percentile) | 35 | 466 | | 60 | 594 | | | 103 | | | 206 | |
| Back of Queue (Q), veh/ln (85 th percentile) | 1.4 | 18.3 | | 2.4 | 23.6 | | | 4.1 | | | 8.1 | |
| Queue Storage Ratio (RQ) (85 th percentile) | 0.22 | 0.00 | | 0.44 | 0.00 | | | 0.00 | | | 0.00 | |
| Control Delay (d), s/veh | 18.5 | 32.9 | | 16.0 | 42.1 | | | 31.6 | | | 39.4 | |
| Level of Service (LOS) | B | C | | B | D | | | C | | | D | |
| Approach Delay, s/veh / LOS | 31.4 | | C | 38.2 | | D | 31.6 | | C | 39.4 | | D |
| Intersection Delay, s/veh / LOS | 35.5 | | | | | | D | | | | | |

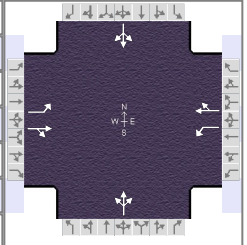


HCS Signalized Intersection Input Data

| General Information | | | | | | Intersection Information | | | | | |  | | | | | |
|--|--|-----------------------------------|--|-----------------|------|------------------------------------|------|---|------|----------|------|---|------|------|------|--|--|
| Agency | | Compass | | | | Duration, h | | 0.250 | | | | | | | | | |
| Analyst | | MVK | | Analysis Date | | Jun 15, 2026 | | Area Type | | Other | | | | | | | |
| Jurisdiction | | City of Worthington | | Time Period | | AM Design Hour | | PHF | | 0.93 | | | | | | | |
| Urban Street | | SR-161 | | Analysis Year | | 2036 | | Analysis Period | | 1 > 7:00 | | | | | | | |
| Intersection | | Proprietors Rd & SR-161 | | File Name | | AM '36 Build Optimized Timings.xus | | | | | | | | | | | |
| Project Description | | Boundless Residential Development | | | | | | | | | | | | | | | |
| Demand Information | | | | EB | | | WB | | | NB | | | SB | | | | |
| Approach Movement | | | | L | T | R | L | T | R | L | T | R | L | T | R | | |
| Demand (v), veh/h | | | | 70 | 572 | 45 | 124 | 566 | 142 | 18 | 0 | 95 | 138 | 13 | 72 | | |
| Signal Information | | | | | | | | | | | | | | | | | |
| Cycle, s | | 96.0 | | Reference Phase | | 2 | |  | | | | | | | | | |
| Offset, s | | 0 | | Reference Point | | End | | Green | | 8.7 | 1.6 | 51.7 | 18.5 | 0.0 | 0.0 | | |
| Uncoordinated | | No | | Simult. Gap E/W | | On | | Yellow | | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | |
| Force Mode | | Fixed | | Simult. Gap N/S | | On | | Red | | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | |
| Traffic Information | | | | EB | | | WB | | | NB | | | SB | | | | |
| Approach Movement | | | | L | T | R | L | T | R | L | T | R | L | T | R | | |
| Demand (v), veh/h | | | | 70 | 572 | 45 | 124 | 566 | 142 | 18 | 0 | 95 | 138 | 13 | 72 | | |
| Initial Queue (Q _b), veh/h | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Base Saturation Flow Rate (s ₀), veh/h | | | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | |
| Parking (N _m), man/h | | | | None | | | None | | | None | | | None | | | | |
| Heavy Vehicles (P _{HV}), % | | | | 2 | 2 | | 1 | 1 | | | 1 | | | 2 | | | |
| Ped / Bike / RTOR, /h | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Buses (N _b), buses/h | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Arrival Type (AT) | | | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | |
| Upstream Filtering (I) | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Lane Width (W), ft | | | | 12.0 | 12.0 | | 12.0 | 12.0 | | | 12.0 | | | 12.0 | | | |
| Turn Bay Length, ft | | | | 160 | 0 | | 135 | 0 | | | 0 | | | 0 | | | |
| Grade (P _g), % | | | | | 0 | | | 0 | | | 0 | | | 0 | | | |
| Speed Limit, mi/h | | | | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | | |
| Phase Information | | | | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | | | | | | |
| Maximum Green (G _{max}) or Phase Split, s | | | | 16.0 | 41.0 | 16.0 | 41.0 | | | 39.0 | | | 39.0 | | | | |
| Yellow Change Interval (Y), s | | | | 3.2 | 4.8 | 3.9 | 4.8 | | | 4.1 | | | 4.1 | | | | |
| Red Clearance Interval (R _c), s | | | | 1.4 | 1.0 | 1.2 | 1.0 | | | 1.0 | | | 1.0 | | | | |
| Minimum Green (G _{min}), s | | | | 10 | 35 | 10 | 35 | | | 15 | | | 15 | | | | |
| Start-Up Lost Time (l _t), s | | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | | |
| Extension of Effective Green (e), s | | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | | |
| Passage (P _T), s | | | | 2.0 | 2.0 | 2.0 | 2.0 | | | 2.0 | | | 2.0 | | | | |
| Recall Mode | | | | Off | Min | Off | Min | | | Off | | | Off | | | | |
| Dual Entry | | | | No | Yes | No | Yes | | | Yes | | | Yes | | | | |
| Walk (Walk), s | | | | | 0.0 | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Pedestrian Clearance Time (P _C), s | | | | | 0.0 | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Multimodal Information | | | | EB | | | WB | | | NB | | | SB | | | | |
| 85th % Speed / Rest in Walk / Corner Radius | | | | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | | |
| Walkway / Crosswalk Width / Length, ft | | | | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | | |
| Street Width / Island / Curb, ft | | | | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | | |
| Width Outside / Bike Lane / Shoulder, ft | | | | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | | |
| Pedestrian Signal / Occupied Parking | | | | No | 0.50 | No | 0.50 | No | 0.50 | No | 0.50 | No | 0.50 | No | 0.50 | | |

HCS Signalized Intersection Results Summary

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|------------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '36 Build Optimized Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|-----|-----|-----|----|---|----|-----|----|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 70 | 572 | 45 | 124 | 566 | 142 | 18 | 0 | 95 | 138 | 13 | 72 |

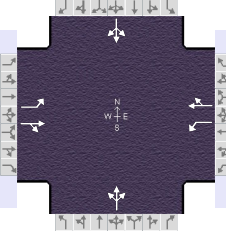
| Signal Information | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|-------|-----------------|-----|-------|-----|-----|------|------|-----|-----|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | | | | | | | | | | | | | | | | | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | | | | | | | | | | | | | | | | | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Green | 8.7 | 1.6 | 51.7 | 18.5 | 0.0 | 0.0 | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 |

| Timer Results | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|--|------|------|------|------|-----|------|-----|------|
| Assigned Phase | 5 | 2 | 1 | 6 | | 8 | | 4 |
| Case Number | 1.1 | 4.0 | 1.1 | 4.0 | | 8.0 | | 8.0 |
| Phase Duration, s | 13.3 | 57.5 | 14.8 | 59.1 | | 23.6 | | 23.6 |
| Change Period, (Y+R _c), s | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Max Allow Headway (MAH), s | 3.1 | 0.0 | 3.1 | 0.0 | | 3.3 | | 3.3 |
| Queue Clearance Time (g _s), s | 3.6 | | 4.8 | | | 8.2 | | 17.8 |
| Green Extension Time (g _e), s | 0.1 | 0.0 | 0.2 | 0.0 | | 0.8 | | 0.7 |
| Phase Call Probability | 0.87 | | 0.97 | | | 1.00 | | 1.00 |
| Max Out Probability | 0.00 | | 0.00 | | | 0.00 | | 0.00 |

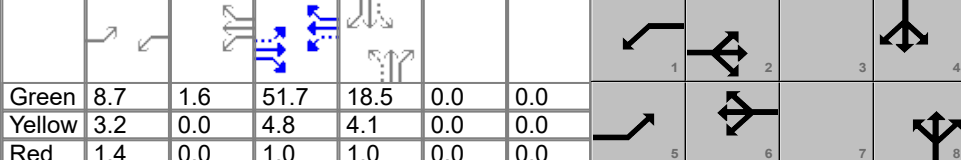
| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|--|-------|-------|----|-------|-------|----|------|-------|----|------|-------|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Assigned Movement | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Adjusted Flow Rate (v), veh/h | 75 | 663 | | 133 | 761 | | | 122 | | | 240 | |
| Adjusted Saturation Flow Rate (s), veh/h/ln | 1781 | 1846 | | 1795 | 1819 | | | 1674 | | | 1411 | |
| Queue Service Time (g _s), s | 1.6 | 24.8 | | 2.8 | 30.7 | | | 0.0 | | | 9.6 | |
| Cycle Queue Clearance Time (g _c), s | 1.6 | 24.8 | | 2.8 | 30.7 | | | 6.2 | | | 15.8 | |
| Green Ratio (g/C) | 0.63 | 0.54 | | 0.64 | 0.56 | | | 0.19 | | | 0.19 | |
| Capacity (c), veh/h | 387 | 995 | | 475 | 1010 | | | 367 | | | 333 | |
| Volume-to-Capacity Ratio (X) | 0.195 | 0.667 | | 0.281 | 0.754 | | | 0.331 | | | 0.720 | |
| Back of Queue (Q), ft/ln (95 th percentile) | 25 | 401 | | 43 | 475 | | | 110 | | | 234 | |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.0 | 15.8 | | 1.7 | 18.8 | | | 4.4 | | | 9.2 | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.15 | 0.00 | | 0.32 | 0.00 | | | 0.00 | | | 0.00 | |
| Uniform Delay (d ₁), s/veh | 12.6 | 15.9 | | 10.6 | 16.3 | | | 33.7 | | | 37.6 | |
| Incremental Delay (d ₂), s/veh | 0.1 | 3.5 | | 0.1 | 5.2 | | | 0.2 | | | 1.1 | |
| Initial Queue Delay (d ₃), s/veh | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | | 0.0 | |
| Control Delay (d), s/veh | 12.6 | 19.5 | | 10.7 | 21.5 | | | 33.9 | | | 38.7 | |
| Level of Service (LOS) | B | B | | B | C | | | C | | | D | |
| Approach Delay, s/veh / LOS | 18.8 | | B | 19.9 | | B | 33.9 | | C | 38.7 | | D |
| Intersection Delay, s/veh / LOS | 22.6 | | | | | | C | | | | | |

| Multimodal Results | EB | | WB | | NB | | SB | |
|----------------------------|------|---|------|---|------|---|------|---|
| Pedestrian LOS Score / LOS | 1.67 | B | 1.66 | B | 1.94 | B | 1.94 | B |
| Bicycle LOS Score / LOS | 1.71 | B | 1.96 | B | 0.69 | A | 0.88 | A |

HCS Signalized Intersection Intermediate Values

| General Information | | | | Intersection Information | |  |
|---------------------|-----------------------------------|---------------|------------------------------------|--------------------------|----------|---|
| Agency | Compass | | | Duration, h | 0.250 | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '36 Build Optimized Timings.xus | | | |
| Project Description | Boundless Residential Development | | | | | |

| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|-----|-----|-----|----|---|----|-----|----|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 70 | 572 | 45 | 124 | 566 | 142 | 18 | 0 | 95 | 138 | 13 | 72 |

| Signal Information | | | |  | | | | | | | | | | | | | |
|--------------------|------|-----------------|-----|--|-----|-----|------|------|-----|-----|------------|-------|-----------------|-----|-----|-----|-----|
| Cycle, s | 96.0 | Reference Phase | 2 | Green | 8.7 | 1.6 | 51.7 | 18.5 | 0.0 | 0.0 | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 |
| Offset, s | 0 | Reference Point | End | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | Force Mode | Fixed | Simult. Gap N/S | On | | | |
| Uncoordinated | No | Simult. Gap E/W | On | | | | | | | | | | | | | | |

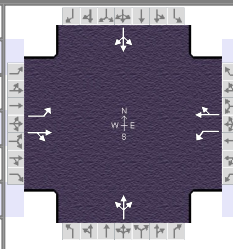
| Saturation Flow / Delay | L | T | R | L | T | R | L | T | R | L | T | R |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Width Adjustment Factor (f_w) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles and Grade Factor (f_{HVg}) | 0.984 | 0.984 | 1.000 | 0.992 | 0.992 | 1.000 | 1.000 | 0.992 | 1.000 | 1.000 | 0.984 | 1.000 |
| Parking Activity Adjustment Factor (f_p) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Bus Blockage Adjustment Factor (f_{bb}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Area Type Adjustment Factor (f_a) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Lane Utilization Adjustment Factor (f_{LU}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Adjustment Factor (f_{LT}) | 0.952 | 0.000 | | 0.952 | 0.000 | | 0.965 | 0.888 | | 0.778 | 0.754 | |
| Right-Turn Adjustment Factor (f_{RT}) | | 0.987 | 0.987 | | 0.965 | 0.965 | | 0.000 | 0.888 | | 0.000 | 0.754 |
| Left-Turn Pedestrian Adjustment Factor (f_{LPB}) | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 | | |
| Right-Turn Ped-Bike Adjustment Factor (f_{RPB}) | | | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 |
| Work Zone Adjustment Factor (f_{WZ}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| DDI Factor (f_{DDI}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$) | 1.00 | | | 1.00 | | | | | | | | |
| Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$) | | | | | | | 1.00 | | | 1.00 | | |
| Movement Saturation Flow Rate (s), veh/h | 1781 | 1711 | 135 | 1795 | 1455 | 365 | 267 | 0 | 1408 | 873 | 82 | 455 |
| Proportion of Vehicles Arriving on Green (P) | 0.09 | 0.54 | 0.54 | 0.10 | 0.56 | 0.56 | 0.19 | 0.00 | 0.19 | 0.19 | 0.19 | 0.19 |
| Incremental Delay Factor (k) | 0.04 | 0.50 | | 0.04 | 0.50 | | | 0.04 | | | 0.04 | |

| Signal Timing / Movement Groups | EBL | EBT/R | WBL | WBT/R | NBL | NBT/R | SBL | SBT/R |
|---|------|-------|------|-------|-----|-------|-----|-------|
| Lost Time (t_L) | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Green Ratio (g/C) | 0.63 | 0.54 | 0.64 | 0.56 | | 0.19 | | 0.19 |
| Permitted Saturation Flow Rate (s_p), veh/h/ln | 705 | 0 | 778 | 0 | | 1326 | | 1313 |
| Shared Saturation Flow Rate (s_{sh}), veh/h/ln | | | | | | 1763 | | 1406 |
| Permitted Effective Green Time (g_p), s | 51.7 | 0.0 | 51.7 | 0.0 | | 18.5 | | 18.5 |
| Permitted Service Time (g_u), s | 20.6 | 0.0 | 26.9 | 0.0 | | 2.7 | | 12.3 |
| Permitted Queue Service Time (g_{ps}), s | 3.7 | | 5.1 | | | 0.0 | | 9.6 |
| Time to First Blockage (g_t), s | 0.0 | 0.0 | 0.0 | 0.0 | | 8.4 | | 0.4 |
| Queue Service Time Before Blockage (g_{fs}), s | | | | | | 0.1 | | 0.4 |
| Protected Right Saturation Flow (s_R), veh/h/ln | | | | | | | | |
| Protected Right Effective Green Time (g_R), s | | | | | | | | |

| Multimodal | EB | | WB | | NB | | SB | |
|----------------------------------|---------|-------|---------|-------|--------|-------|--------|-------|
| Pedestrian F_w / F_v | 0.972 | 0.000 | 0.972 | 0.000 | 1.198 | 0.000 | 1.198 | 0.000 |
| Pedestrian F_s / F_{delay} | 0.000 | 0.093 | 0.000 | 0.090 | 0.000 | 0.138 | 0.000 | 0.138 |
| Pedestrian M_{corner} / M_{cw} | 0.00 | | 0.00 | | 0.00 | | 0.00 | |
| Bicycle c_b / d_b | 1077.97 | 10.20 | 1110.43 | 9.50 | 386.32 | 31.25 | 386.32 | 31.25 |
| Bicycle F_w / F_v | -3.64 | 1.22 | -3.64 | 1.48 | -3.64 | 0.20 | -3.64 | 0.40 |

HCS Signalized Intersection Results Graphical Summary

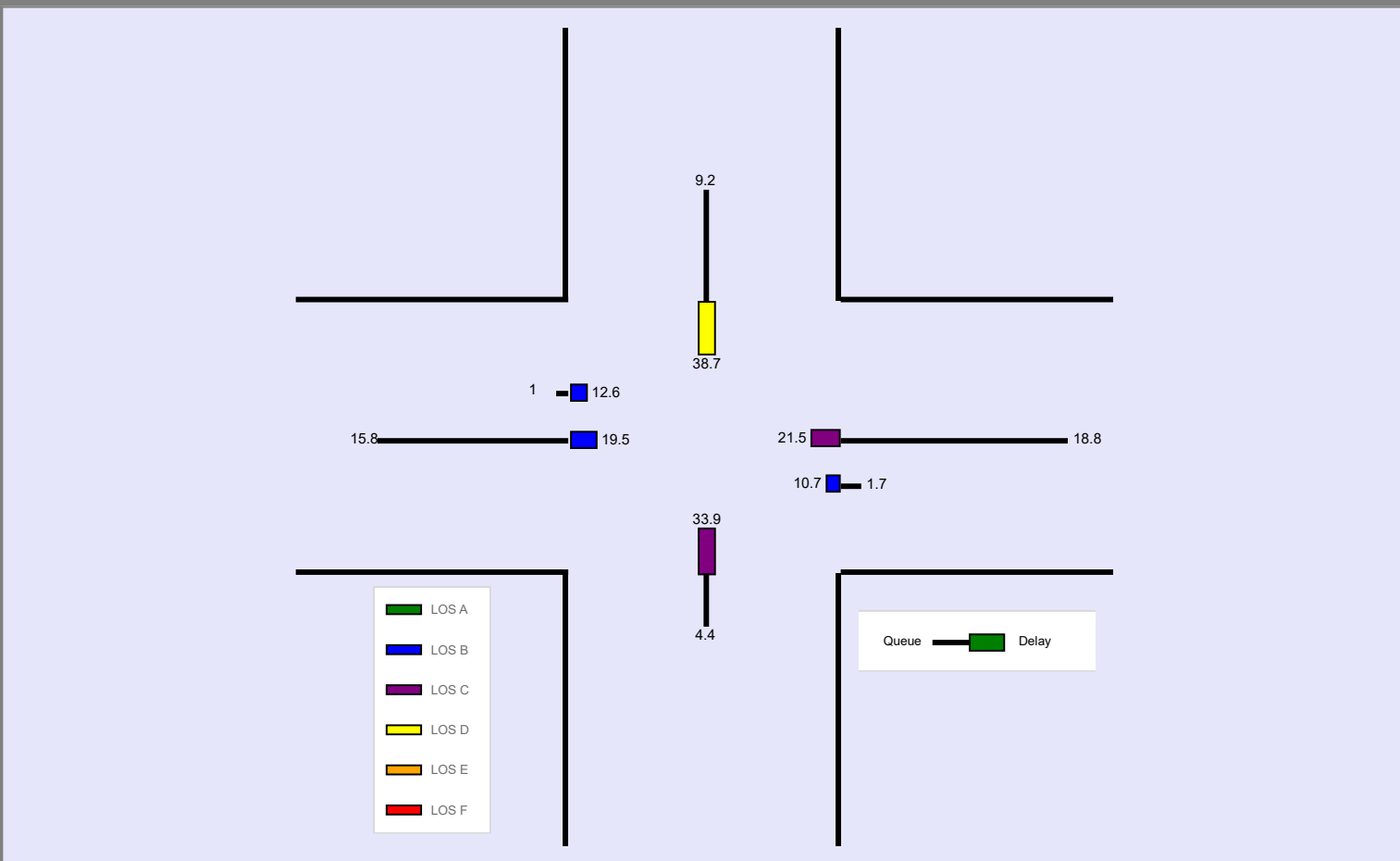
| General Information | | | | Intersection Information | |
|---------------------|-----------------------------------|---------------|------------------------------------|--------------------------|----------|
| Agency | Compass | | | Duration, h | 0.250 |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other |
| Jurisdiction | City of Worthington | Time Period | AM Design Hour | PHF | 0.93 |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 |
| Intersection | Proprietors Rd & SR-161 | File Name | AM '36 Build Optimized Timings.xus | | |
| Project Description | Boundless Residential Development | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|-----|-----|-----|----|---|----|-----|----|----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 70 | 572 | 45 | 124 | 566 | 142 | 18 | 0 | 95 | 138 | 13 | 72 |

| Signal Information | | | | | | | | | | | | | | |
|--------------------|-------|-----------------|-----|--------|-----|-----|------|------|-----|-----|--|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | | | | | | | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | | | | | | | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | | | | | | | | | | | |
| | | | | Green | 8.7 | 1.6 | 51.7 | 18.5 | 0.0 | 0.0 | | | | |
| | | | | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | | |
| | | | | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|------|------|---|------|------|---|------|------|---|------|------|---|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 25 | 401 | | 43 | 475 | | | 110 | | | 234 | |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.0 | 15.8 | | 1.7 | 18.8 | | | 4.4 | | | 9.2 | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.15 | 0.00 | | 0.32 | 0.00 | | | 0.00 | | | 0.00 | |
| Control Delay (d), s/veh | 12.6 | 19.5 | | 10.7 | 21.5 | | | 33.9 | | | 38.7 | |
| Level of Service (LOS) | B | B | | B | C | | | C | | | D | |
| Approach Delay, s/veh / LOS | 18.8 | | B | 19.9 | | B | 33.9 | | C | 38.7 | | D |
| Intersection Delay, s/veh / LOS | 22.6 | | | | | | C | | | | | |

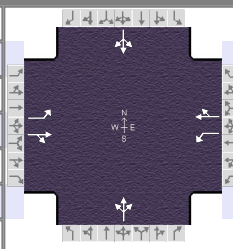


Section 4

PM Opening Year

HCS Signalized Intersection Input Data

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | | |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '26 Bck Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|--------------------|----|-----|---|----|-----|-----|----|---|----|----|---|-----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 55 | 827 | 2 | 9 | 792 | 127 | 19 | 7 | 26 | 88 | 0 | 137 |

| Signal Information | | | | Signal Timing (s) | | | | | | | | | Signal Phases | | | |
|--------------------|-------|-----------------|-----|-------------------|------|-----|------|------|-----|-----|--|--|---------------|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | | | |

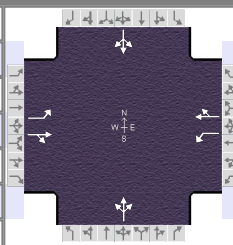
| Traffic Information | EB | | | WB | | | NB | | | SB | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 55 | 827 | 2 | 9 | 792 | 127 | 19 | 7 | 26 | 88 | 0 | 137 |
| Initial Queue (Q _b), veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Base Saturation Flow Rate (s ₀), veh/h | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Parking (N _m), man/h | | None | | | None | | | None | | | None | |
| Heavy Vehicles (P _{HV}), % | 2 | 2 | | 1 | 1 | | | 1 | | | 2 | |
| Ped / Bike / RTOR, /h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buses (N _b), buses/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arrival Type (AT) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Upstream Filtering (I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lane Width (W), ft | 12.0 | 12.0 | | 12.0 | 12.0 | | | 12.0 | | | 12.0 | |
| Turn Bay Length, ft | 160 | 0 | | 135 | 0 | | | 0 | | | 0 | |
| Grade (P _g), % | | 0 | | | 0 | | | 0 | | | 0 | |
| Speed Limit, mi/h | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |

| Phase Information | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|------|------|------|------|-----|------|-----|
| | Maximum Green (G _{max}) or Phase Split, s | 19.6 | 50.8 | 20.1 | 51.3 | | 25.1 | |
| Yellow Change Interval (Y), s | 3.2 | 4.8 | 3.9 | 4.8 | | 4.1 | | 4.1 |
| Red Clearance Interval (R _c), s | 1.4 | 1.0 | 1.2 | 1.0 | | 1.0 | | 1.0 |
| Minimum Green (G _{min}), s | 10 | 35 | 10 | 35 | | 15 | | 15 |
| Start-Up Lost Time (lt), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Extension of Effective Green (e), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Passage (PT), s | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | | 2.0 |
| Recall Mode | Max | Max | Max | Max | | Max | | Max |
| Dual Entry | No | Yes | No | Yes | | Yes | | Yes |
| Walk (Walk), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |
| Pedestrian Clearance Time (PC), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |

| Multimodal Information | EB | | | WB | | | NB | | | SB | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| | | | | | | | | | | | | |
| 85th % Speed / Rest in Walk / Corner Radius | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 |
| Walkway / Crosswalk Width / Length, ft | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 |
| Street Width / Island / Curb, ft | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No |
| Width Outside / Bike Lane / Shoulder, ft | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 |
| Pedestrian Signal / Occupied Parking | No | 0.50 | | No | 0.50 | | No | 0.50 | | No | 0.50 | |

HCS Signalized Intersection Results Summary

| General Information | | | | Intersection Information | |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|
| Agency | Compass | | | Duration, h | 0.250 |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '26 Bck Existing Timings.xus | | |
| Project Description | Boundless Residential Development | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|---|----|-----|-----|----|---|----|----|---|-----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 55 | 827 | 2 | 9 | 792 | 127 | 19 | 7 | 26 | 88 | 0 | 137 |

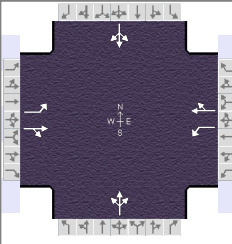
| Signal Information | | | | Signal Timing (s) | | | | | | | | Signal Phases | | | | | | | |
|--------------------|-------|-----------------|-----|-------------------|------|-----|------|------|-----|-----|-----|---------------|-----|-----|-----|-----|-----|-----|--|
| Cycle, s | 96.0 | Reference Phase | 2 | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Offset, s | 0 | Reference Point | End | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Uncoordinated | No | Simult. Gap E/W | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Force Mode | Fixed | Simult. Gap N/S | On | | | | | | | | | | | | | | | | |

| Timer Results | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|--|------|------|------|------|-----|------|-----|------|
| Assigned Phase | 5 | 2 | 1 | 6 | | 8 | | 4 |
| Case Number | 1.1 | 4.0 | 1.1 | 4.0 | | 8.0 | | 8.0 |
| Phase Duration, s | 19.6 | 50.8 | 20.1 | 51.3 | | 25.1 | | 25.1 |
| Change Period, (Y+R _c), s | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Max Allow Headway (MAH), s | 3.1 | 0.0 | 3.1 | 0.0 | | 3.3 | | 3.3 |
| Queue Clearance Time (g _s), s | 3.2 | | 2.2 | | | 4.4 | | 15.6 |
| Green Extension Time (g _e), s | 0.0 | 0.0 | 0.0 | 0.0 | | 0.5 | | 0.3 |
| Phase Call Probability | 1.00 | | 1.00 | | | 1.00 | | 1.00 |
| Max Out Probability | 0.00 | | 0.00 | | | 0.00 | | 0.40 |

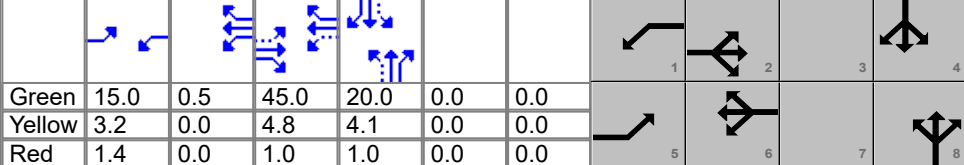
| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|--|-------|-------|----|-------|-------|----|-------|---|----|-------|---|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Assigned Movement | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Adjusted Flow Rate (v), veh/h | 57 | 855 | | 9 | 947 | | 54 | | | 232 | | |
| Adjusted Saturation Flow Rate (s), veh/h/ln | 1781 | 1870 | | 1795 | 1839 | | 1487 | | | 1519 | | |
| Queue Service Time (g _s), s | 1.2 | 42.9 | | 0.2 | 45.5 | | 0.0 | | | 11.1 | | |
| Cycle Queue Clearance Time (g _c), s | 1.2 | 42.9 | | 0.2 | 45.5 | | 2.4 | | | 13.6 | | |
| Green Ratio (g/C) | 0.62 | 0.47 | | 0.62 | 0.47 | | 0.21 | | | 0.21 | | |
| Capacity (c), veh/h | 353 | 876 | | 369 | 872 | | 361 | | | 369 | | |
| Volume-to-Capacity Ratio (X) | 0.160 | 0.975 | | 0.025 | 1.087 | | 0.148 | | | 0.629 | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 29 | 799 | | 4 | 1104 | | 49 | | | 245 | | |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.1 | 31.5 | | 0.2 | 43.8 | | 1.9 | | | 9.6 | | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.18 | 0.00 | | 0.03 | 0.00 | | 0.00 | | | 0.00 | | |
| Uniform Delay (d ₁), s/veh | 17.5 | 25.0 | | 16.5 | 25.3 | | 31.0 | | | 35.3 | | |
| Incremental Delay (d ₂), s/veh | 1.0 | 25.0 | | 0.1 | 56.8 | | 0.9 | | | 7.9 | | |
| Initial Queue Delay (d ₃), s/veh | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | | 0.0 | | |
| Control Delay (d), s/veh | 18.5 | 49.9 | | 16.7 | 82.0 | | 31.9 | | | 43.3 | | |
| Level of Service (LOS) | B | D | | B | F | | C | | | D | | |
| Approach Delay, s/veh / LOS | 48.0 | | D | 81.4 | | F | 31.9 | | C | 43.3 | | D |
| Intersection Delay, s/veh / LOS | 61.9 | | | | | | E | | | | | |

| Multimodal Results | EB | | WB | | NB | | SB | |
|----------------------------|------|---|------|---|------|---|------|---|
| Pedestrian LOS Score / LOS | 1.68 | B | 1.68 | B | 1.93 | B | 1.93 | B |
| Bicycle LOS Score / LOS | 1.99 | B | 2.07 | B | 0.58 | A | 0.87 | A |

HCS Signalized Intersection Intermediate Values

| General Information | | | | Intersection Information | |  |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|---|
| Agency | Compass | | | Duration, h | 0.250 | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '26 Bck Existing Timings.xus | | | |
| Project Description | Boundless Residential Development | | | | | |

| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|---|----|-----|-----|----|---|----|----|---|-----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 55 | 827 | 2 | 9 | 792 | 127 | 19 | 7 | 26 | 88 | 0 | 137 |

| Signal Information | | | |  | | | | | | | | | | | | | |
|--------------------|------|-----------------|-----|--|------|-----|------|------|-----|-----|------------|-------|-----------------|-----|-----|-----|-----|
| Cycle, s | 96.0 | Reference Phase | 2 | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 |
| Offset, s | 0 | Reference Point | End | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | Force Mode | Fixed | Simult. Gap N/S | On | | | |

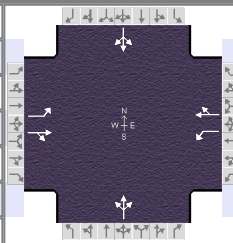
| Saturation Flow / Delay | L | T | R | L | T | R | L | T | R | L | T | R |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Width Adjustment Factor (f_w) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles and Grade Factor (f_{HVg}) | 0.984 | 0.984 | 1.000 | 0.992 | 0.992 | 1.000 | 1.000 | 0.992 | 1.000 | 1.000 | 0.984 | 1.000 |
| Parking Activity Adjustment Factor (f_p) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Bus Blockage Adjustment Factor (f_{bb}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Area Type Adjustment Factor (f_a) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Lane Utilization Adjustment Factor (f_{LU}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Adjustment Factor (f_{LT}) | 0.952 | 0.000 | | 0.952 | 0.000 | | 0.822 | 0.789 | | 0.892 | 0.812 | |
| Right-Turn Adjustment Factor (f_{RT}) | | 1.000 | 1.000 | | 0.976 | 0.976 | | 0.000 | 0.789 | | 0.000 | 0.812 |
| Left-Turn Pedestrian Adjustment Factor (f_{LPB}) | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 | | |
| Right-Turn Ped-Bike Adjustment Factor (f_{RPB}) | | | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 |
| Work Zone Adjustment Factor (f_{WZ}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| DDI Factor (f_{DDI}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$) | 1.00 | | | 1.00 | | | | | | | | |
| Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$) | | | | | | | 1.00 | | | 1.00 | | |
| Movement Saturation Flow Rate (s), veh/h | 1781 | 1865 | 5 | 1795 | 1585 | 254 | 543 | 200 | 744 | 594 | 0 | 925 |
| Proportion of Vehicles Arriving on Green (P) | 0.16 | 0.47 | 0.47 | 0.16 | 0.47 | 0.47 | 0.21 | 0.21 | 0.21 | 0.21 | 0.00 | 0.21 |
| Incremental Delay Factor (k) | 0.50 | 0.50 | | 0.50 | 0.50 | | | 0.50 | | | 0.50 | |

| Signal Timing / Movement Groups | EBL | EBT/R | WBL | WBT/R | NBL | NBT/R | SBL | SBT/R |
|---|------|-------|------|-------|-----|-------|-----|-------|
| Lost Time (t_L) | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Green Ratio (g/C) | 0.63 | 0.47 | 0.63 | 0.47 | | 0.21 | | 0.21 |
| Permitted Saturation Flow Rate (s_p), veh/h/ln | 592 | 0 | 651 | 0 | | 1267 | | 1396 |
| Shared Saturation Flow Rate (s_{sh}), veh/h/ln | | | | | | 1409 | | 1639 |
| Permitted Effective Green Time (g_p), s | 45.0 | 0.0 | 45.0 | 0.0 | | 20.0 | | 20.0 |
| Permitted Service Time (g_u), s | 0.0 | 0.0 | 2.1 | 0.0 | | 6.4 | | 17.6 |
| Permitted Queue Service Time (g_{ps}), s | 0.0 | | 0.6 | | | 0.0 | | 11.1 |
| Time to First Blockage (g_t), s | 0.0 | 0.0 | 0.0 | 0.0 | | 3.4 | | 2.5 |
| Queue Service Time Before Blockage (g_{fs}), s | | | | | | 0.9 | | 2.5 |
| Protected Right Saturation Flow (s_R), veh/h/ln | | | | | | | | |
| Protected Right Effective Green Time (g_R), s | | | | | | | | |

| Multimodal | EB | | WB | | NB | | SB | |
|----------------------------------|--------|-------|--------|-------|--------|-------|--------|-------|
| Pedestrian F_w / F_v | 0.972 | 0.000 | 0.972 | 0.000 | 1.198 | 0.000 | 1.198 | 0.000 |
| Pedestrian F_s / F_{delay} | 0.000 | 0.105 | 0.000 | 0.104 | 0.000 | 0.136 | 0.000 | 0.136 |
| Pedestrian M_{corner} / M_{cw} | 0.00 | | 0.00 | | 0.00 | | 0.00 | |
| Bicycle c_b / d_b | 937.50 | 13.55 | 947.92 | 13.28 | 416.67 | 30.08 | 416.67 | 30.08 |
| Bicycle F_w / F_v | -3.64 | 1.50 | -3.64 | 1.58 | -3.64 | 0.09 | -3.64 | 0.38 |

HCS Signalized Intersection Results Graphical Summary

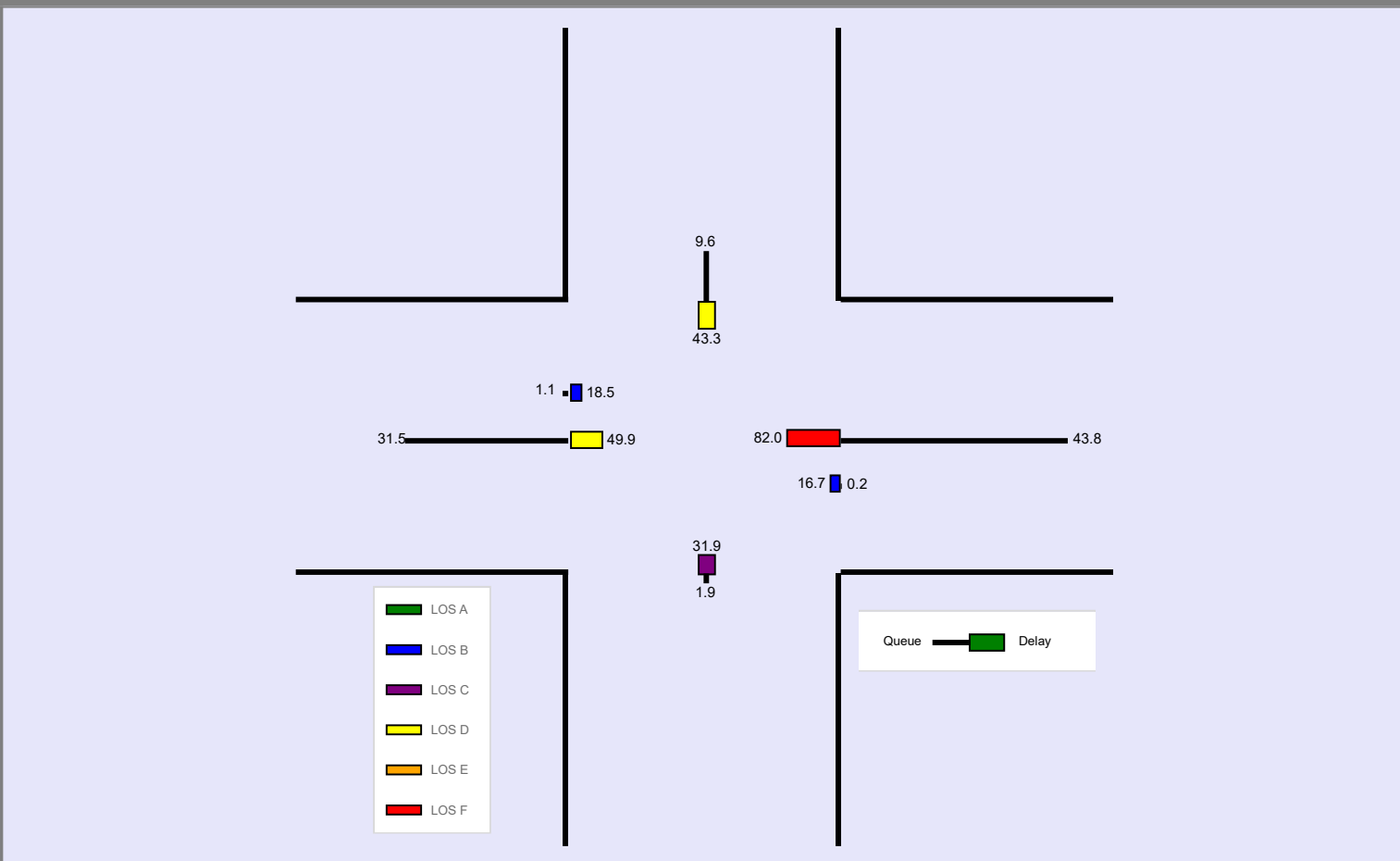
| General Information | | | | Intersection Information | |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|
| Agency | Compass | | | Duration, h | 0.250 |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '26 Bck Existing Timings.xus | | |
| Project Description | Boundless Residential Development | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|---|----|-----|-----|----|---|----|----|---|-----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 55 | 827 | 2 | 9 | 792 | 127 | 19 | 7 | 26 | 88 | 0 | 137 |

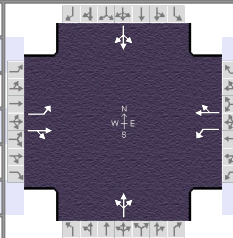
| Signal Information | | | | Signal Timing (s) | | | | | | | | | |
|--------------------|-------|-----------------|-----|-------------------|------|-----|------|------|-----|-----|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|------|------|---|------|------|---|------|------|---|------|---|------|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 29 | 799 | | 4 | 1104 | | | 49 | | | | 245 |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.1 | 31.5 | | 0.2 | 43.8 | | | 1.9 | | | | 9.6 |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.18 | 0.00 | | 0.03 | 0.00 | | | 0.00 | | | | 0.00 |
| Control Delay (d), s/veh | 18.5 | 49.9 | | 16.7 | 82.0 | | | 31.9 | | | | 43.3 |
| Level of Service (LOS) | B | D | | B | F | | | C | | | | D |
| Approach Delay, s/veh / LOS | 48.0 | | D | 81.4 | | F | 31.9 | | C | 43.3 | | D |
| Intersection Delay, s/veh / LOS | 61.9 | | | | | | E | | | | | |



HCS Signalized Intersection Input Data

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|-----------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | | |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '26 Build Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|----------------------------|----|-----|----|----|-----|-----|----|----|----|----|---|-----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (<i>v</i>), veh/h | 55 | 827 | 19 | 74 | 792 | 127 | 42 | 15 | 58 | 88 | 0 | 137 |

| Signal Information | | | | Signal Timing (s) | | | | | | | | Signal Phases | | | | | | |
|--------------------|-------|-----------------|-----|-------------------|------|-----|------|------|-----|-----|-----|---------------|-----|-----|-----|-----|-----|-----|
| Cycle, s | 96.0 | Reference Phase | 2 | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Offset, s | 0 | Reference Point | End | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Uncoordinated | No | Simult. Gap E/W | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Force Mode | Fixed | Simult. Gap N/S | On | | | | | | | | | | | | | | | |

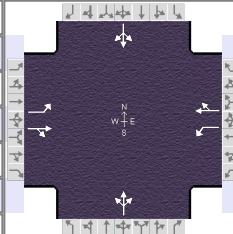
| Traffic Information | EB | | | WB | | | NB | | | SB | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (<i>v</i>), veh/h | 55 | 827 | 19 | 74 | 792 | 127 | 42 | 15 | 58 | 88 | 0 | 137 |
| Initial Queue (<i>Q_b</i>), veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Base Saturation Flow Rate (<i>s₀</i>), veh/h | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Parking (<i>N_m</i>), man/h | None | | | None | | | None | | | None | | |
| Heavy Vehicles (<i>P_{HV}</i>), % | 2 | 2 | | 1 | 1 | | | 1 | | | 2 | |
| Ped / Bike / RTOR, /h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buses (<i>N_b</i>), buses/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arrival Type (<i>AT</i>) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Upstream Filtering (<i>I</i>) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lane Width (<i>W</i>), ft | 12.0 | 12.0 | | 12.0 | 12.0 | | | 12.0 | | | 12.0 | |
| Turn Bay Length, ft | 160 | 0 | | 135 | 0 | | | 0 | | | 0 | |
| Grade (<i>P_g</i>), % | | 0 | | | 0 | | | 0 | | | 0 | |
| Speed Limit, mi/h | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |

| Phase Information | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|--|------|------|------|------|-----|------|-----|------|
| Maximum Green (<i>G_{max}</i>) or Phase Split, s | 19.6 | 50.8 | 20.1 | 51.3 | | 25.1 | | 25.1 |
| Yellow Change Interval (<i>Y</i>), s | 3.2 | 4.8 | 3.9 | 4.8 | | 4.1 | | 4.1 |
| Red Clearance Interval (<i>R_c</i>), s | 1.4 | 1.0 | 1.2 | 1.0 | | 1.0 | | 1.0 |
| Minimum Green (<i>G_{min}</i>), s | 10 | 35 | 10 | 35 | | 15 | | 15 |
| Start-Up Lost Time (<i>l_t</i>), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Extension of Effective Green (<i>e</i>), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Passage (<i>PT</i>), s | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | | 2.0 |
| Recall Mode | Max | Max | Max | Max | | Max | | Max |
| Dual Entry | No | Yes | No | Yes | | Yes | | Yes |
| Walk (<i>Walk</i>), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |
| Pedestrian Clearance Time (<i>PC</i>), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |

| Multimodal Information | EB | | | WB | | | NB | | | SB | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| 85th % Speed / Rest in Walk / Corner Radius | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 |
| Walkway / Crosswalk Width / Length, ft | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 |
| Street Width / Island / Curb, ft | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No |
| Width Outside / Bike Lane / Shoulder, ft | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 |
| Pedestrian Signal / Occupied Parking | No | 0.50 | | No | 0.50 | | No | 0.50 | | No | 0.50 | |

HCS Signalized Intersection Results Summary

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|-----------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | | |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '26 Build Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|-----------------------|----|-----|----|----|-----|-----|----|----|----|----|---|-----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 55 | 827 | 19 | 74 | 792 | 127 | 42 | 15 | 58 | 88 | 0 | 137 |

| Signal Information | | | | Signal Timing (s) | | | | | | | | | Signal Phases | | | |
|--------------------|-------|-----------------|-----|-------------------|------|-----|------|------|-----|-----|--|--|---------------|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | | | |

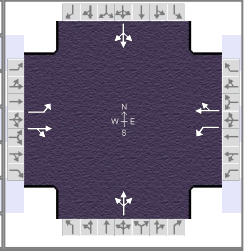
| Timer Results | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|-----------------------------------|------|------|------|------|-----|------|-----|------|
| Assigned Phase | 5 | 2 | 1 | 6 | | 8 | | 4 |
| Case Number | 1.1 | 4.0 | 1.1 | 4.0 | | 8.0 | | 8.0 |
| Phase Duration, s | 19.6 | 50.8 | 20.1 | 51.3 | | 25.1 | | 25.1 |
| Change Period, ($Y+R_c$), s | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Max Allow Headway (MAH), s | 3.1 | 0.0 | 3.1 | 0.0 | | 3.3 | | 3.3 |
| Queue Clearance Time (g_s), s | 3.2 | | 3.6 | | | 8.1 | | 15.4 |
| Green Extension Time (g_e), s | 0.0 | 0.0 | 0.1 | 0.0 | | 0.6 | | 0.4 |
| Phase Call Probability | 1.00 | | 1.00 | | | 1.00 | | 1.00 |
| Max Out Probability | 0.00 | | 0.00 | | | 0.00 | | 0.40 |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|-------|-------|----|-------|-------|----|------|-------|----|------|-------|----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Assigned Movement | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Adjusted Flow Rate (v), veh/h | 57 | 872 | | 76 | 947 | | | 119 | | | 232 | |
| Adjusted Saturation Flow Rate (s), veh/h/ln | 1781 | 1863 | | 1795 | 1839 | | | 1491 | | | 1523 | |
| Queue Service Time (g_s), s | 1.2 | 44.9 | | 1.6 | 45.5 | | | 0.0 | | | 7.3 | |
| Cycle Queue Clearance Time (g_c), s | 1.2 | 44.9 | | 1.6 | 45.5 | | | 6.1 | | | 13.4 | |
| Green Ratio (g/C) | 0.62 | 0.47 | | 0.62 | 0.47 | | | 0.21 | | | 0.21 | |
| Capacity (c), veh/h | 353 | 873 | | 356 | 872 | | | 362 | | | 370 | |
| Volume-to-Capacity Ratio (X) | 0.160 | 0.999 | | 0.214 | 1.087 | | | 0.328 | | | 0.628 | |
| Back of Queue (Q), ft/ln (95 th percentile) | 29 | 858 | | 39 | 1104 | | | 115 | | | 244 | |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.1 | 33.8 | | 1.5 | 43.8 | | | 4.6 | | | 9.6 | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.18 | 0.00 | | 0.29 | 0.00 | | | 0.00 | | | 0.00 | |
| Uniform Delay (d_1), s/veh | 17.5 | 25.5 | | 17.6 | 25.3 | | | 32.4 | | | 35.2 | |
| Incremental Delay (d_2), s/veh | 1.0 | 30.2 | | 1.4 | 56.8 | | | 2.4 | | | 7.8 | |
| Initial Queue Delay (d_3), s/veh | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | | 0.0 | |
| Control Delay (d), s/veh | 18.5 | 55.6 | | 19.0 | 82.0 | | | 34.8 | | | 43.0 | |
| Level of Service (LOS) | B | E | | B | F | | | C | | | D | |
| Approach Delay, s/veh / LOS | 53.4 | | D | 77.3 | | E | 34.8 | | C | 43.0 | | D |
| Intersection Delay, s/veh / LOS | 62.0 | | | | | | E | | | | | |

| Multimodal Results | EB | | WB | | NB | | SB | |
|----------------------------|------|---|------|---|------|---|------|---|
| Pedestrian LOS Score / LOS | 1.68 | B | 1.68 | B | 1.93 | B | 1.93 | B |
| Bicycle LOS Score / LOS | 2.02 | B | 2.18 | B | 0.68 | A | 0.87 | A |

HCS Signalized Intersection Intermediate Values

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|-----------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | | |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '26 Build Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|----|-----|-----|----|----|----|----|---|-----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 55 | 827 | 19 | 74 | 792 | 127 | 42 | 15 | 58 | 88 | 0 | 137 |

| Signal Information | | | | Signal Phases | | | | | | | | |
|--------------------|-------|-----------------|-----|---------------|------|-----|------|------|-----|-----|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | |

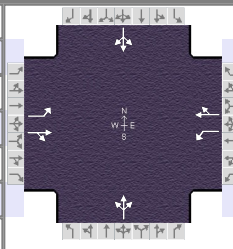
| Saturation Flow / Delay | L | T | R | L | T | R | L | T | R | L | T | R |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Width Adjustment Factor (f_w) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles and Grade Factor (f_{HVg}) | 0.984 | 0.984 | 1.000 | 0.992 | 0.992 | 1.000 | 1.000 | 0.992 | 1.000 | 1.000 | 0.984 | 1.000 |
| Parking Activity Adjustment Factor (f_p) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Bus Blockage Adjustment Factor (f_{bb}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Area Type Adjustment Factor (f_a) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Lane Utilization Adjustment Factor (f_{LU}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Adjustment Factor (f_{LT}) | 0.952 | 0.000 | | 0.952 | 0.000 | | 0.825 | 0.791 | | 0.878 | 0.815 | |
| Right-Turn Adjustment Factor (f_{RT}) | | 0.996 | 0.996 | | 0.976 | 0.976 | | 0.000 | 0.791 | | 0.000 | 0.815 |
| Left-Turn Pedestrian Adjustment Factor (f_{LPB}) | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 | | |
| Right-Turn Ped-Bike Adjustment Factor (f_{RPB}) | | | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 |
| Work Zone Adjustment Factor (f_{WZ}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| DDI Factor (f_{DDI}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$) | 1.00 | | | 1.00 | | | | | | | | |
| Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$) | | | | | | | 1.00 | | | 1.00 | | |
| Movement Saturation Flow Rate (s), veh/h | 1781 | 1821 | 42 | 1795 | 1585 | 254 | 545 | 194 | 752 | 596 | 0 | 928 |
| Proportion of Vehicles Arriving on Green (P) | 0.16 | 0.47 | 0.47 | 0.16 | 0.47 | 0.47 | 0.21 | 0.21 | 0.21 | 0.21 | 0.00 | 0.21 |
| Incremental Delay Factor (k) | 0.50 | 0.50 | | 0.50 | 0.50 | | | 0.50 | | | 0.50 | |

| Signal Timing / Movement Groups | EBL | EBT/R | WBL | WBT/R | NBL | NBT/R | SBL | SBT/R |
|---|------|-------|------|-------|-----|-------|-----|-------|
| Lost Time (t_L) | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Green Ratio (g/C) | 0.63 | 0.47 | 0.63 | 0.47 | | 0.21 | | 0.21 |
| Permitted Saturation Flow Rate (s_p), veh/h/ln | 592 | 0 | 640 | 0 | | 1267 | | 1345 |
| Shared Saturation Flow Rate (s_{sh}), veh/h/ln | | | | | | 1416 | | 1611 |
| Permitted Effective Green Time (g_p), s | 45.0 | 0.0 | 45.0 | 0.0 | | 20.0 | | 20.0 |
| Permitted Service Time (g_u), s | 0.0 | 0.0 | 0.1 | 0.0 | | 6.6 | | 13.9 |
| Permitted Queue Service Time (g_{ps}), s | 0.0 | | 0.1 | | | 0.0 | | 7.3 |
| Time to First Blockage (g_t), s | 0.0 | 0.0 | 0.0 | 0.0 | | 3.4 | | 2.5 |
| Queue Service Time Before Blockage (g_{fs}), s | | | | | | 2.0 | | 2.5 |
| Protected Right Saturation Flow (s_R), veh/h/ln | | | | | | | | |
| Protected Right Effective Green Time (g_R), s | | | | | | | | |

| Multimodal | EB | | WB | | NB | | SB | |
|----------------------------------|--------|-------|--------|-------|--------|-------|--------|-------|
| Pedestrian F_w / F_v | 0.972 | 0.000 | 0.972 | 0.000 | 1.198 | 0.000 | 1.198 | 0.000 |
| Pedestrian F_s / F_{delay} | 0.000 | 0.105 | 0.000 | 0.104 | 0.000 | 0.136 | 0.000 | 0.136 |
| Pedestrian M_{corner} / M_{cw} | 0.00 | | 0.00 | | 0.00 | | 0.00 | |
| Bicycle c_b / d_b | 937.50 | 13.55 | 947.92 | 13.28 | 416.67 | 30.08 | 416.67 | 30.08 |
| Bicycle F_w / F_v | -3.64 | 1.53 | -3.64 | 1.69 | -3.64 | 0.20 | -3.64 | 0.38 |

HCS Signalized Intersection Results Graphical Summary

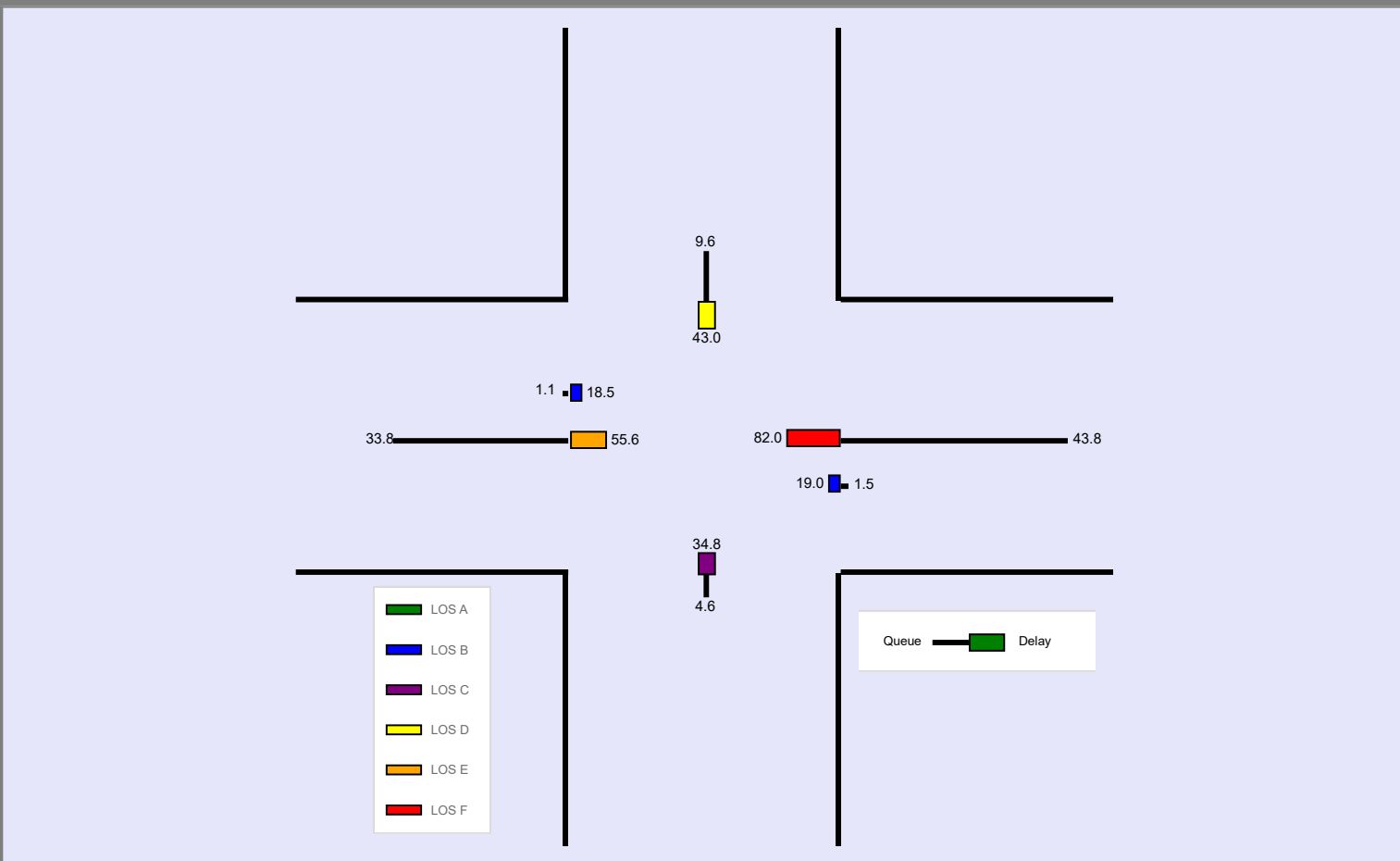
| General Information | | | | Intersection Information | |
|---------------------|-----------------------------------|---------------|-----------------------------------|--------------------------|----------|
| Agency | Compass | | | Duration, h | 0.250 |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 |
| Urban Street | SR-161 | Analysis Year | 2026 | Analysis Period | 1 > 7:00 |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '26 Build Existing Timings.xus | | |
| Project Description | Boundless Residential Development | | | | |



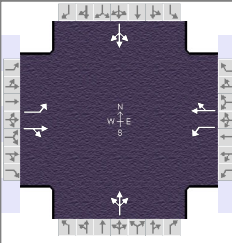
| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|----|-----|-----|----|----|----|----|---|-----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 55 | 827 | 19 | 74 | 792 | 127 | 42 | 15 | 58 | 88 | 0 | 137 |

| Signal Information | | | | Phase Diagrams | | | | | | | |
|--------------------|-------|-----------------|-----|----------------|------|-----|------|------|-----|-----|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|------|------|---|------|------|---|------|------|---|------|---|------|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 29 | 858 | | 39 | 1104 | | | 115 | | | | 244 |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.1 | 33.8 | | 1.5 | 43.8 | | | 4.6 | | | | 9.6 |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.18 | 0.00 | | 0.29 | 0.00 | | | 0.00 | | | | 0.00 |
| Control Delay (d), s/veh | 18.5 | 55.6 | | 19.0 | 82.0 | | | 34.8 | | | | 43.0 |
| Level of Service (LOS) | B | E | | B | F | | | C | | | | D |
| Approach Delay, s/veh / LOS | 53.4 | | D | 77.3 | | E | 34.8 | | C | 43.0 | | D |
| Intersection Delay, s/veh / LOS | 62.0 | | | | | | E | | | | | |

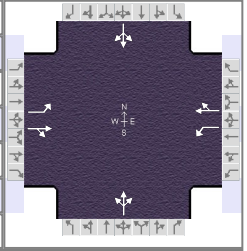


HCS Signalized Intersection Input Data

| General Information | | | | | | Intersection Information | | | | | |  | | | | |
|--|-----------------------------------|-----------------|---------------|------------------------------------|------|--------------------------|----------|------|------|------|------|---|------|------|------|--|
| Agency | Compass | | | | | Duration, h | 0.250 | | | | | | | | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | | | Area Type | Other | | | | | | | | | |
| Jurisdiction | City of Worthington | | Time Period | PM Design Hour | | PHF | 0.97 | | | | | | | | | |
| Urban Street | SR-161 | | Analysis Year | 2036 | | Analysis Period | 1 > 7:00 | | | | | | | | | |
| Intersection | Proprietors Rd & SR-161 | | File Name | PM '26 Build Optimized Timings.xus | | | | | | | | | | | | |
| Project Description | Boundless Residential Development | | | | | | | | | | | | | | | |
| Demand Information | | | | EB | | | WB | | | NB | | | SB | | | |
| Approach Movement | | | | L | T | R | L | T | R | L | T | R | L | T | R | |
| Demand (v), veh/h | | | | 55 | 827 | 19 | 74 | 792 | 127 | 42 | 15 | 58 | 88 | 0 | 137 | |
| Signal Information | | | | | | | | | | | | | | | | |
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | | | | | | | | | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Green | 7.8 | 1.4 | 54.6 | 16.7 | 0.0 | 0.0 | | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | | | | |
| | | | | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | | | |
| Traffic Information | | | | EB | | | WB | | | NB | | | SB | | | |
| Approach Movement | | | | L | T | R | L | T | R | L | T | R | L | T | R | |
| Demand (v), veh/h | | | | 55 | 827 | 19 | 74 | 792 | 127 | 42 | 15 | 58 | 88 | 0 | 137 | |
| Initial Queue (Q _b), veh/h | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Base Saturation Flow Rate (s ₀), veh/h | | | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Parking (N _m), man/h | | | | None | | | None | | | None | | | None | | | |
| Heavy Vehicles (P _{HV}), % | | | | 2 | 2 | | 1 | 1 | | | 1 | | | 2 | | |
| Ped / Bike / RTOR, /h | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Buses (N _b), buses/h | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Arrival Type (AT) | | | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| Upstream Filtering (I) | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Lane Width (W), ft | | | | 12.0 | 12.0 | | 12.0 | 12.0 | | | 12.0 | | | 12.0 | | |
| Turn Bay Length, ft | | | | 160 | 0 | | 135 | 0 | | | 0 | | | 0 | | |
| Grade (P _g), % | | | | | 0 | | | 0 | | | 0 | | | 0 | | |
| Speed Limit, mi/h | | | | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | |
| Phase Information | | | | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | | | | | |
| Maximum Green (G _{max}) or Phase Split, s | | | | 16.0 | 41.0 | 16.0 | 41.0 | | | 39.0 | | | 39.0 | | | |
| Yellow Change Interval (Y), s | | | | 3.2 | 4.8 | 3.9 | 4.8 | | | 4.1 | | | 4.1 | | | |
| Red Clearance Interval (R _c), s | | | | 1.4 | 1.0 | 1.2 | 1.0 | | | 1.0 | | | 1.0 | | | |
| Minimum Green (G _{min}), s | | | | 10 | 35 | 10 | 35 | | | 15 | | | 15 | | | |
| Start-Up Lost Time (l _t), s | | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Extension of Effective Green (e), s | | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Passage (P _T), s | | | | 2.0 | 2.0 | 2.0 | 2.0 | | | 2.0 | | | 2.0 | | | |
| Recall Mode | | | | Off | Off | Off | Off | | | Off | | | Off | | | |
| Dual Entry | | | | No | Yes | No | Yes | | | Yes | | | Yes | | | |
| Walk (Walk), s | | | | | 0.0 | | 0.0 | | | 0.0 | | | 0.0 | | | |
| Pedestrian Clearance Time (P _C), s | | | | | 0.0 | | 0.0 | | | 0.0 | | | 0.0 | | | |
| Multimodal Information | | | | EB | | | WB | | | NB | | | SB | | | |
| 85th % Speed / Rest in Walk / Corner Radius | | | | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | |
| Walkway / Crosswalk Width / Length, ft | | | | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | |
| Street Width / Island / Curb, ft | | | | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | |
| Width Outside / Bike Lane / Shoulder, ft | | | | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | |
| Pedestrian Signal / Occupied Parking | | | | No | 0.50 | | No | 0.50 | | No | 0.50 | | No | 0.50 | | |

HCS Signalized Intersection Results Summary

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|------------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '26 Build Optimized Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|----|-----|-----|----|----|----|----|---|-----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 55 | 827 | 19 | 74 | 792 | 127 | 42 | 15 | 58 | 88 | 0 | 137 |

| Signal Information | | | | Signal Phases | | | | | | | | | |
|--------------------|-------|-----------------|-----|---------------|-----|-----|------|------|-----|-----|-----|-----|-----|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 7.8 | 1.4 | 54.6 | 16.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

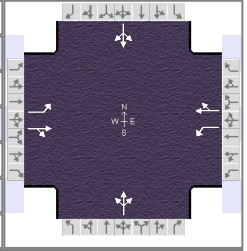
| Timer Results | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|--|------|------|------|------|-----|------|-----|------|
| Assigned Phase | 5 | 2 | 1 | 6 | | 8 | | 4 |
| Case Number | 1.1 | 4.0 | 1.1 | 4.0 | | 8.0 | | 8.0 |
| Phase Duration, s | 12.4 | 60.4 | 13.8 | 61.8 | | 21.8 | | 21.8 |
| Change Period, (Y+R _c), s | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Max Allow Headway (MAH), s | 3.1 | 0.0 | 3.1 | 0.0 | | 3.3 | | 3.3 |
| Queue Clearance Time (g _s), s | 3.1 | | 3.5 | | | 8.5 | | 16.0 |
| Green Extension Time (g _e), s | 0.1 | 0.0 | 0.1 | 0.0 | | 0.7 | | 0.7 |
| Phase Call Probability | 0.78 | | 0.87 | | | 1.00 | | 1.00 |
| Max Out Probability | 0.00 | | 0.00 | | | 0.00 | | 0.00 |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|--|-------|-------|----|-------|-------|----|------|-------|----|------|-------|----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Assigned Movement | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Adjusted Flow Rate (v), veh/h | 57 | 872 | | 76 | 947 | | | 119 | | | 232 | |
| Adjusted Saturation Flow Rate (s), veh/h/ln | 1781 | 1863 | | 1795 | 1839 | | | 1476 | | | 1533 | |
| Queue Service Time (g _s), s | 1.1 | 36.4 | | 1.5 | 42.5 | | | 0.0 | | | 7.5 | |
| Cycle Queue Clearance Time (g _c), s | 1.1 | 36.4 | | 1.5 | 42.5 | | | 6.5 | | | 14.0 | |
| Green Ratio (g/C) | 0.65 | 0.57 | | 0.66 | 0.58 | | | 0.17 | | | 0.17 | |
| Capacity (c), veh/h | 290 | 1060 | | 359 | 1073 | | | 308 | | | 319 | |
| Volume-to-Capacity Ratio (X) | 0.195 | 0.823 | | 0.213 | 0.883 | | | 0.385 | | | 0.727 | |
| Back of Queue (Q), ft/ln (95 th percentile) | 26 | 569 | | 28 | 651 | | | 111 | | | 229 | |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.0 | 22.4 | | 1.1 | 25.8 | | | 4.4 | | | 9.0 | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.16 | 0.00 | | 0.21 | 0.00 | | | 0.00 | | | 0.00 | |
| Uniform Delay (d ₁), s/veh | 16.8 | 16.8 | | 13.7 | 17.2 | | | 35.3 | | | 38.3 | |
| Incremental Delay (d ₂), s/veh | 0.1 | 7.2 | | 0.1 | 10.5 | | | 0.3 | | | 1.2 | |
| Initial Queue Delay (d ₃), s/veh | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | | 0.0 | |
| Control Delay (d), s/veh | 16.9 | 24.0 | | 13.8 | 27.7 | | | 35.6 | | | 39.5 | |
| Level of Service (LOS) | B | C | | B | C | | | D | | | D | |
| Approach Delay, s/veh / LOS | 23.6 | C | | 26.7 | C | | 35.6 | D | | 39.5 | D | |
| Intersection Delay, s/veh / LOS | 27.2 | | | | | | C | | | | | |

| Multimodal Results | EB | | WB | | NB | | SB | |
|----------------------------|------|---|------|---|------|---|------|---|
| Pedestrian LOS Score / LOS | 1.66 | B | 1.66 | B | 1.94 | B | 1.94 | B |
| Bicycle LOS Score / LOS | 2.02 | B | 2.18 | B | 0.68 | A | 0.87 | A |

HCS Signalized Intersection Intermediate Values

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|------------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '26 Build Optimized Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|--------------------|----|-----|----|----|-----|-----|----|----|----|----|---|-----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 55 | 827 | 19 | 74 | 792 | 127 | 42 | 15 | 58 | 88 | 0 | 137 |

| Signal Information | | | | | | | | | | | | | | |
|--------------------|-------|-----------------|-----|--------|-----|-----|------|------|-----|-----|--|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | | | | | | | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Green | 7.8 | 1.4 | 54.6 | 16.7 | 0.0 | 0.0 | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | | |
| | | | | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | |

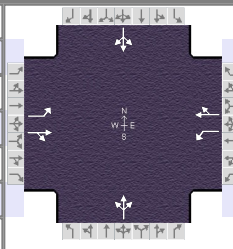
| Saturation Flow / Delay | L | T | R | L | T | R | L | T | R | L | T | R |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Width Adjustment Factor (f_w) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles and Grade Factor (f_{HVg}) | 0.984 | 0.984 | 1.000 | 0.992 | 0.992 | 1.000 | 1.000 | 0.992 | 1.000 | 1.000 | 0.984 | 1.000 |
| Parking Activity Adjustment Factor (f_p) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Bus Blockage Adjustment Factor (f_{bb}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Area Type Adjustment Factor (f_a) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Lane Utilization Adjustment Factor (f_{LU}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Adjustment Factor (f_{LT}) | 0.952 | 0.000 | | 0.952 | 0.000 | | 0.810 | 0.783 | | 0.876 | 0.820 | |
| Right-Turn Adjustment Factor (f_{RT}) | | 0.996 | 0.996 | | 0.976 | 0.976 | | 0.000 | 0.783 | | 0.000 | 0.820 |
| Left-Turn Pedestrian Adjustment Factor (f_{LPB}) | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 | | |
| Right-Turn Ped-Bike Adjustment Factor (f_{RPB}) | | | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 |
| Work Zone Adjustment Factor (f_{WZ}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| DDI Factor (f_{DDI}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$) | 1.00 | | | 1.00 | | | | | | | | |
| Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$) | | | | | | | 1.00 | | | 1.00 | | |
| Movement Saturation Flow Rate (s), veh/h | 1781 | 1821 | 42 | 1795 | 1585 | 254 | 539 | 193 | 744 | 600 | 0 | 934 |
| Proportion of Vehicles Arriving on Green (P) | 0.08 | 0.57 | 0.57 | 0.09 | 0.58 | 0.58 | 0.17 | 0.17 | 0.17 | 0.17 | 0.00 | 0.17 |
| Incremental Delay Factor (k) | 0.04 | 0.50 | | 0.04 | 0.50 | | | 0.04 | | | 0.04 | |

| Signal Timing / Movement Groups | EBL | EBT/R | WBL | WBT/R | NBL | NBT/R | SBL | SBT/R |
|---|------|-------|------|-------|-----|-------|-----|-------|
| Lost Time (t_L) | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Green Ratio (g/C) | 0.65 | 0.57 | 0.66 | 0.58 | | 0.17 | | 0.17 |
| Permitted Saturation Flow Rate (s_p), veh/h/ln | 592 | 0 | 640 | 0 | | 1267 | | 1345 |
| Shared Saturation Flow Rate (s_{sh}), veh/h/ln | | | | | | 1394 | | 1611 |
| Permitted Effective Green Time (g_p), s | 54.6 | 0.0 | 54.6 | 0.0 | | 16.7 | | 16.7 |
| Permitted Service Time (g_u), s | 11.5 | 0.0 | 18.1 | 0.0 | | 2.7 | | 10.2 |
| Permitted Queue Service Time (g_{ps}), s | 4.6 | | 4.9 | | | 0.0 | | 7.5 |
| Time to First Blockage (g_t), s | 0.0 | 0.0 | 0.0 | 0.0 | | 3.4 | | 1.7 |
| Queue Service Time Before Blockage (g_{fs}), s | | | | | | 2.1 | | 1.7 |
| Protected Right Saturation Flow (s_R), veh/h/ln | | | | | | | | |
| Protected Right Effective Green Time (g_R), s | | | | | | | | |

| Multimodal | EB | | WB | | NB | | SB | |
|----------------------------------|---------|-------|---------|-------|--------|-------|--------|-------|
| Pedestrian F_w / F_v | 0.972 | 0.000 | 0.972 | 0.000 | 1.198 | 0.000 | 1.198 | 0.000 |
| Pedestrian F_s / F_{delay} | 0.000 | 0.088 | 0.000 | 0.085 | 0.000 | 0.140 | 0.000 | 0.140 |
| Pedestrian M_{corner} / M_{cw} | 0.00 | | 0.00 | | 0.00 | | 0.00 | |
| Bicycle c_b / d_b | 1137.62 | 8.92 | 1166.73 | 8.33 | 347.95 | 32.75 | 347.95 | 32.75 |
| Bicycle F_w / F_v | -3.64 | 1.53 | -3.64 | 1.69 | -3.64 | 0.20 | -3.64 | 0.38 |

HCS Signalized Intersection Results Graphical Summary

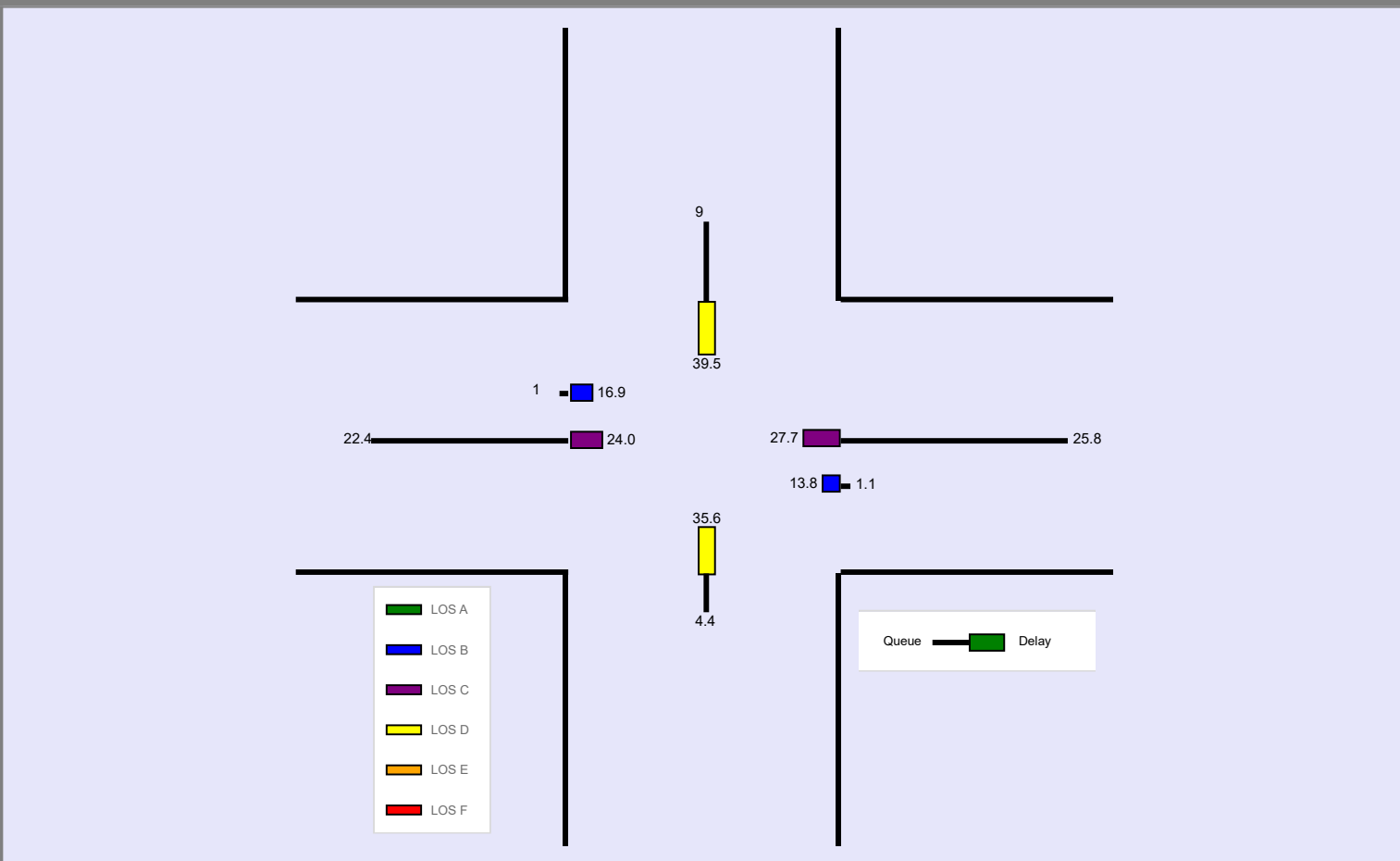
| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|------------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '26 Build Optimized Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|----|-----|-----|----|----|----|----|---|-----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 55 | 827 | 19 | 74 | 792 | 127 | 42 | 15 | 58 | 88 | 0 | 137 |

| Signal Information | | | | Signal Phases | | | | | | | | |
|--------------------|-------|-----------------|-----|---------------|-----|-----|------|------|-----|-----|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 7.8 | 1.4 | 54.6 | 16.7 | 0.0 | 0.0 | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|------|------|---|------|------|---|------|------|---|------|------|---|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 26 | 569 | | 28 | 651 | | | 111 | | | 229 | |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.0 | 22.4 | | 1.1 | 25.8 | | | 4.4 | | | 9.0 | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.16 | 0.00 | | 0.21 | 0.00 | | | 0.00 | | | 0.00 | |
| Control Delay (d), s/veh | 16.9 | 24.0 | | 13.8 | 27.7 | | | 35.6 | | | 39.5 | |
| Level of Service (LOS) | B | C | | B | C | | | D | | | D | |
| Approach Delay, s/veh / LOS | 23.6 | | C | 26.7 | | C | 35.6 | | D | 39.5 | | D |
| Intersection Delay, s/veh / LOS | 27.2 | | | | | | C | | | | | |

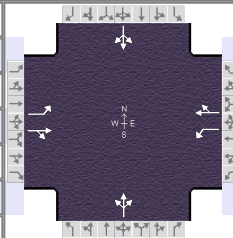


Section 5

PM Horizon Year

HCS Signalized Intersection Input Data

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '36 Bck Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|--------------------|----|-----|---|----|-----|-----|----|---|----|----|---|-----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 57 | 860 | 2 | 10 | 824 | 132 | 19 | 7 | 27 | 97 | 0 | 151 |

| Signal Information | | | | Signal Timing (s) | | | | | | | | | Signal Phases | | | |
|--------------------|-------|-----------------|-----|-------------------|------|-----|------|------|-----|-----|--|--|---------------|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | | | |

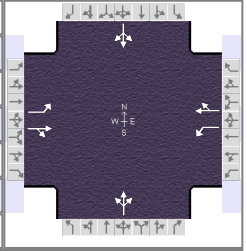
| Traffic Information | EB | | | WB | | | NB | | | SB | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 57 | 860 | 2 | 10 | 824 | 132 | 19 | 7 | 27 | 97 | 0 | 151 |
| Initial Queue (Q _b), veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Base Saturation Flow Rate (s ₀), veh/h | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Parking (N _m), man/h | | None | | | None | | | None | | | None | |
| Heavy Vehicles (P _{HV}), % | 2 | 2 | | 1 | 1 | | | 1 | | | 2 | |
| Ped / Bike / RTOR, /h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buses (N _b), buses/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arrival Type (AT) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Upstream Filtering (I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lane Width (W), ft | 12.0 | 12.0 | | 12.0 | 12.0 | | | 12.0 | | | 12.0 | |
| Turn Bay Length, ft | 160 | 0 | | 135 | 0 | | | 0 | | | 0 | |
| Grade (P _g), % | | 0 | | | 0 | | | 0 | | | 0 | |
| Speed Limit, mi/h | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |

| Phase Information | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|------|------|------|------|-----|------|-----|------|
| Maximum Green (G _{max}) or Phase Split, s | 19.6 | 50.8 | 20.1 | 51.3 | | 25.1 | | 25.1 |
| Yellow Change Interval (Y), s | 3.2 | 4.8 | 3.9 | 4.8 | | 4.1 | | 4.1 |
| Red Clearance Interval (R _c), s | 1.4 | 1.0 | 1.2 | 1.0 | | 1.0 | | 1.0 |
| Minimum Green (G _{min}), s | 10 | 35 | 10 | 35 | | 15 | | 15 |
| Start-Up Lost Time (lt), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Extension of Effective Green (e), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Passage (PT), s | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | | 2.0 |
| Recall Mode | Max | Max | Max | Max | | Max | | Max |
| Dual Entry | No | Yes | No | Yes | | Yes | | Yes |
| Walk (Walk), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |
| Pedestrian Clearance Time (PC), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |

| Multimodal Information | EB | | | WB | | | NB | | | SB | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| 85th % Speed / Rest in Walk / Corner Radius | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 |
| Walkway / Crosswalk Width / Length, ft | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 |
| Street Width / Island / Curb, ft | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No |
| Width Outside / Bike Lane / Shoulder, ft | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 |
| Pedestrian Signal / Occupied Parking | No | 0.50 | | No | 0.50 | | No | 0.50 | | No | 0.50 | |

HCS Signalized Intersection Results Summary

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '36 Bck Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|-----------------------|----|-----|---|----|-----|-----|----|---|----|----|---|-----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 57 | 860 | 2 | 10 | 824 | 132 | 19 | 7 | 27 | 97 | 0 | 151 |

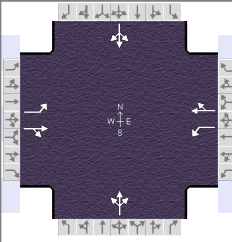
| Signal Information | | | | Signal Timing (s) | | | | | | | | Signal Phases | | | |
|--------------------|-------|-----------------|-----|-------------------|------|-----|------|------|-----|-----|--|---------------|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | | |

| Timer Results | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|-----------------------------------|------|------|------|------|-----|------|-----|------|
| Assigned Phase | 5 | 2 | 1 | 6 | | 8 | | 4 |
| Case Number | 1.1 | 4.0 | 1.1 | 4.0 | | 8.0 | | 8.0 |
| Phase Duration, s | 19.6 | 50.8 | 20.1 | 51.3 | | 25.1 | | 25.1 |
| Change Period, ($Y+R_c$), s | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Max Allow Headway (MAH), s | 3.1 | 0.0 | 3.1 | 0.0 | | 3.3 | | 3.3 |
| Queue Clearance Time (g_s), s | 3.2 | | 2.2 | | | 4.5 | | 17.3 |
| Green Extension Time (g_e), s | 0.0 | 0.0 | 0.0 | 0.0 | | 0.6 | | 0.2 |
| Phase Call Probability | 1.00 | | 1.00 | | | 1.00 | | 1.00 |
| Max Out Probability | 0.00 | | 0.00 | | | 0.00 | | 1.00 |

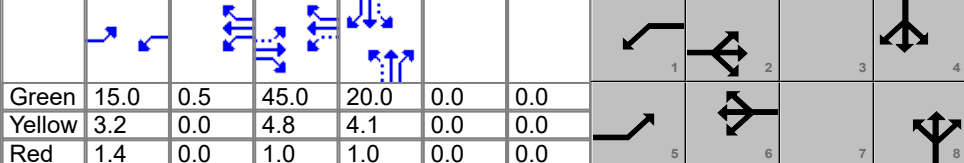
| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|-------|-------|----|-------|-------|----|-------|---|----|-------|---|----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Assigned Movement | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Adjusted Flow Rate (v), veh/h | 59 | 889 | | 10 | 986 | | 55 | | | 256 | | |
| Adjusted Saturation Flow Rate (s), veh/h/ln | 1781 | 1870 | | 1795 | 1839 | | 1457 | | | 1518 | | |
| Queue Service Time (g_s), s | 1.2 | 45.0 | | 0.2 | 45.5 | | 0.0 | | | 12.8 | | |
| Cycle Queue Clearance Time (g_c), s | 1.2 | 45.0 | | 0.2 | 45.5 | | 2.5 | | | 15.3 | | |
| Green Ratio (g/C) | 0.62 | 0.47 | | 0.62 | 0.47 | | 0.21 | | | 0.21 | | |
| Capacity (c), veh/h | 353 | 876 | | 356 | 872 | | 354 | | | 368 | | |
| Volume-to-Capacity Ratio (X) | 0.166 | 1.014 | | 0.029 | 1.130 | | 0.154 | | | 0.694 | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 30 | 899 | | 5 | 1259 | | 50 | | | 274 | | |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.2 | 35.4 | | 0.2 | 50.0 | | 2.0 | | | 10.8 | | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.19 | 0.00 | | 0.04 | 0.00 | | 0.00 | | | 0.00 | | |
| Uniform Delay (d_1), s/veh | 17.5 | 25.5 | | 17.3 | 25.3 | | 31.1 | | | 36.0 | | |
| Incremental Delay (d_2), s/veh | 1.0 | 33.9 | | 0.2 | 73.1 | | 0.9 | | | 10.3 | | |
| Initial Queue Delay (d_3), s/veh | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | | 0.0 | | |
| Control Delay (d), s/veh | 18.5 | 59.4 | | 17.5 | 98.3 | | 32.0 | | | 46.3 | | |
| Level of Service (LOS) | B | F | | B | F | | C | | | D | | |
| Approach Delay, s/veh / LOS | 56.9 | | E | 97.5 | | F | 32.0 | | C | 46.3 | | D |
| Intersection Delay, s/veh / LOS | 73.0 | | | | | | E | | | | | |

| Multimodal Results | EB | | WB | | NB | | SB | |
|----------------------------|------|---|------|---|------|---|------|---|
| Pedestrian LOS Score / LOS | 1.68 | B | 1.68 | B | 1.93 | B | 1.93 | B |
| Bicycle LOS Score / LOS | 2.05 | B | 2.13 | B | 0.58 | A | 0.91 | A |

HCS Signalized Intersection Intermediate Values

| General Information | | | | Intersection Information | |  |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|---|
| Agency | Compass | | | Duration, h | 0.250 | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '36 Bck Existing Timings.xus | | | |
| Project Description | Boundless Residential Development | | | | | |

| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|---|----|-----|-----|----|---|----|----|---|-----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 57 | 860 | 2 | 10 | 824 | 132 | 19 | 7 | 27 | 97 | 0 | 151 |

| Signal Information | | | |  | | | | | | | | | | |
|--------------------|-------|-----------------|-----|--|------|-----|------|------|-----|-----|--|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | | | | |
| Offset, s | 0 | Reference Point | End | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | | | | | | | | | | | |

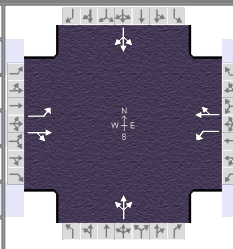
| Saturation Flow / Delay | L | T | R | L | T | R | L | T | R | L | T | R |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Width Adjustment Factor (f_w) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles and Grade Factor (f_{HVg}) | 0.984 | 0.984 | 1.000 | 0.992 | 0.992 | 1.000 | 1.000 | 0.992 | 1.000 | 1.000 | 0.984 | 1.000 |
| Parking Activity Adjustment Factor (f_p) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Bus Blockage Adjustment Factor (f_{bb}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Area Type Adjustment Factor (f_a) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Lane Utilization Adjustment Factor (f_{LU}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Adjustment Factor (f_{LT}) | 0.952 | 0.000 | | 0.952 | 0.000 | | 0.802 | 0.773 | | 0.889 | 0.811 | |
| Right-Turn Adjustment Factor (f_{RT}) | | 1.000 | 1.000 | | 0.976 | 0.976 | | 0.000 | 0.773 | | 0.000 | 0.811 |
| Left-Turn Pedestrian Adjustment Factor (f_{LPB}) | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 | | |
| Right-Turn Ped-Bike Adjustment Factor (f_{RPB}) | | | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 |
| Work Zone Adjustment Factor (f_{WZ}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| DDI Factor (f_{DDI}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$) | 1.00 | | | 1.00 | | | | | | | | |
| Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$) | | | | | | | 1.00 | | | 1.00 | | |
| Movement Saturation Flow Rate (s), veh/h | 1781 | 1865 | 4 | 1795 | 1585 | 254 | 522 | 192 | 742 | 594 | 0 | 924 |
| Proportion of Vehicles Arriving on Green (P) | 0.16 | 0.47 | 0.47 | 0.16 | 0.47 | 0.47 | 0.21 | 0.21 | 0.21 | 0.21 | 0.00 | 0.21 |
| Incremental Delay Factor (k) | 0.50 | 0.50 | | 0.50 | 0.50 | | | 0.50 | | | 0.50 | |

| Signal Timing / Movement Groups | EBL | EBT/R | WBL | WBT/R | NBL | NBT/R | SBL | SBT/R |
|---|------|-------|------|-------|-----|-------|-----|-------|
| Lost Time (t_L) | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Green Ratio (g/C) | 0.63 | 0.47 | 0.63 | 0.47 | | 0.21 | | 0.21 |
| Permitted Saturation Flow Rate (s_p), veh/h/ln | 571 | 0 | 630 | 0 | | 1251 | | 1395 |
| Shared Saturation Flow Rate (s_{sh}), veh/h/ln | | | | | | 1369 | | 1638 |
| Permitted Effective Green Time (g_p), s | 45.0 | 0.0 | 45.0 | 0.0 | | 20.0 | | 20.0 |
| Permitted Service Time (g_u), s | 0.0 | 0.0 | 0.0 | 0.0 | | 4.7 | | 17.5 |
| Permitted Queue Service Time (g_{ps}), s | 0.0 | | 0.0 | | | 0.0 | | 12.8 |
| Time to First Blockage (g_t), s | 0.0 | 0.0 | 0.0 | 0.0 | | 3.5 | | 2.1 |
| Queue Service Time Before Blockage (g_{fs}), s | | | | | | 0.9 | | 2.1 |
| Protected Right Saturation Flow (s_R), veh/h/ln | | | | | | | | |
| Protected Right Effective Green Time (g_R), s | | | | | | | | |

| Multimodal | EB | | WB | | NB | | SB | |
|----------------------------------|--------|-------|--------|-------|--------|-------|--------|-------|
| Pedestrian F_w / F_v | 0.972 | 0.000 | 0.972 | 0.000 | 1.198 | 0.000 | 1.198 | 0.000 |
| Pedestrian F_s / F_{delay} | 0.000 | 0.105 | 0.000 | 0.104 | 0.000 | 0.136 | 0.000 | 0.136 |
| Pedestrian M_{corner} / M_{cw} | 0.00 | | 0.00 | | 0.00 | | 0.00 | |
| Bicycle c_b / d_b | 937.50 | 13.55 | 947.92 | 13.28 | 416.67 | 30.08 | 416.67 | 30.08 |
| Bicycle F_w / F_v | -3.64 | 1.56 | -3.64 | 1.64 | -3.64 | 0.09 | -3.64 | 0.42 |

HCS Signalized Intersection Results Graphical Summary

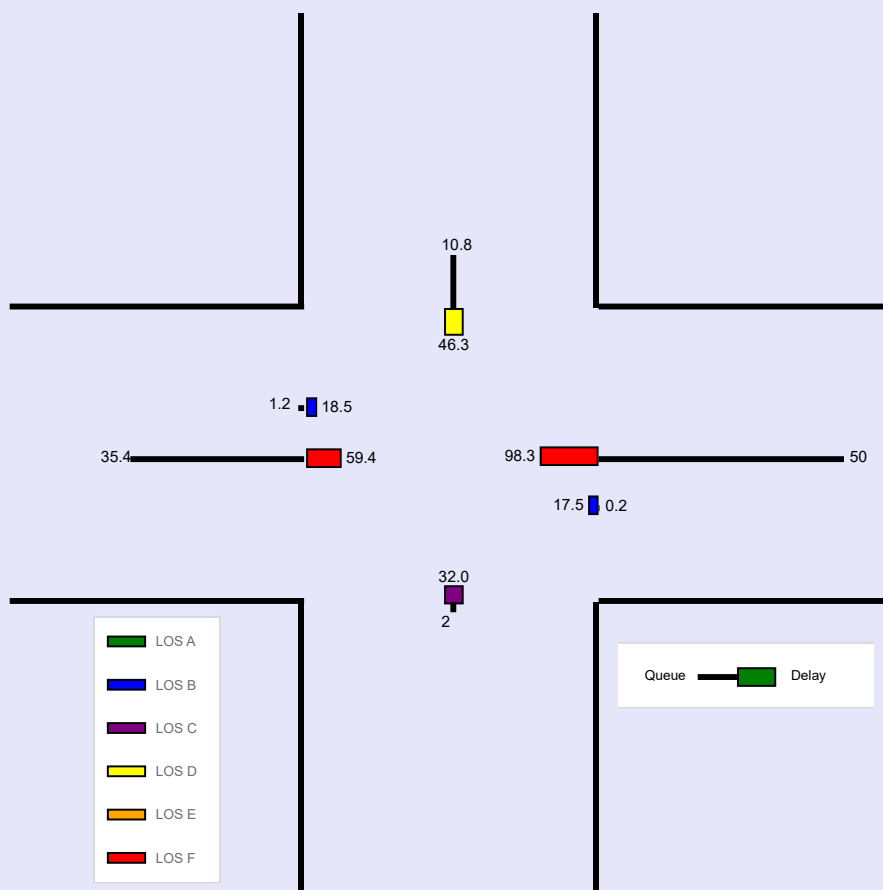
| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|---------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '36 Bck Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|---|----|-----|-----|----|---|----|----|---|-----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 57 | 860 | 2 | 10 | 824 | 132 | 19 | 7 | 27 | 97 | 0 | 151 |

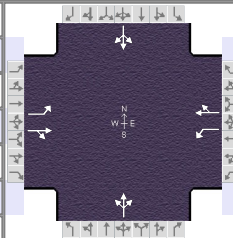
| Signal Information | | | | Signal Phases | | | | | | | |
|--------------------|-------|-----------------|-----|---------------|------|-----|------|------|-----|-----|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|----------|------|---|----------|------|---|----------|------|---|----------|------|---|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 30 | 899 | | 5 | 1259 | | | 50 | | | 274 | |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.2 | 35.4 | | 0.2 | 50.0 | | | 2.0 | | | 10.8 | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.19 | 0.00 | | 0.04 | 0.00 | | | 0.00 | | | 0.00 | |
| Control Delay (d), s/veh | 18.5 | 59.4 | | 17.5 | 98.3 | | | 32.0 | | | 46.3 | |
| Level of Service (LOS) | B | F | | B | F | | | C | | | D | |
| Approach Delay, s/veh / LOS | 56.9 / E | | | 97.5 / F | | | 32.0 / C | | | 46.3 / D | | |
| Intersection Delay, s/veh / LOS | 73.0 | | | | | | E | | | | | |



HCS Signalized Intersection Input Data

| General Information | | | | Intersection Information | | | |
|---------------------|-----------------------------------|---------------|-----------------------------------|--------------------------|----------|--|--|
| Agency | Compass | | | Duration, h | 0.250 | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '36 Build Existing Timings.xus | | | | |
| Project Description | Boundless Residential Development | | | | | | |



| Demand Information | EB | | | WB | | | NB | | | SB | | |
|----------------------------|----|-----|----|----|-----|-----|----|----|----|----|---|-----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (<i>v</i>), veh/h | 57 | 860 | 19 | 75 | 824 | 132 | 42 | 15 | 59 | 97 | 0 | 151 |

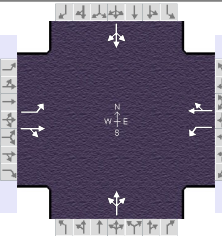
| Signal Information | | | | Signal Timing (s) | | | | | | | | Signal Phases | | | |
|--------------------|-------|-----------------|-----|-------------------|------|-----|------|------|-----|-----|--|---------------|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | | |

| Traffic Information | EB | | | WB | | | NB | | | SB | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (<i>v</i>), veh/h | 57 | 860 | 19 | 75 | 824 | 132 | 42 | 15 | 59 | 97 | 0 | 151 |
| Initial Queue (<i>Q_b</i>), veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Base Saturation Flow Rate (<i>s₀</i>), veh/h | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Parking (<i>N_m</i>), man/h | | None | | | None | | | None | | | None | |
| Heavy Vehicles (<i>P_{HV}</i>), % | 2 | 2 | | 1 | 1 | | | 1 | | | 2 | |
| Ped / Bike / RTOR, /h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buses (<i>N_b</i>), buses/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arrival Type (<i>AT</i>) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Upstream Filtering (<i>I</i>) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lane Width (<i>W</i>), ft | 12.0 | 12.0 | | 12.0 | 12.0 | | | 12.0 | | | 12.0 | |
| Turn Bay Length, ft | 160 | 0 | | 135 | 0 | | | 0 | | | 0 | |
| Grade (<i>P_g</i>), % | | 0 | | | 0 | | | 0 | | | 0 | |
| Speed Limit, mi/h | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |

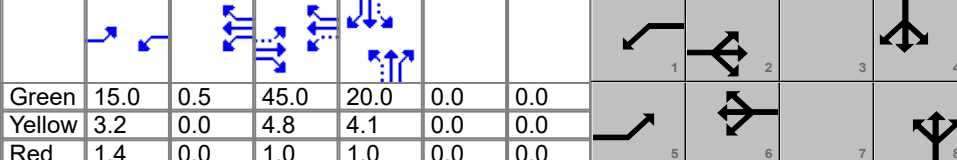
| Phase Information | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|--|------|------|------|------|-----|------|-----|------|
| Maximum Green (<i>G_{max}</i>) or Phase Split, s | 19.6 | 50.8 | 20.1 | 51.3 | | 25.1 | | 25.1 |
| Yellow Change Interval (<i>Y</i>), s | 3.2 | 4.8 | 3.9 | 4.8 | | 4.1 | | 4.1 |
| Red Clearance Interval (<i>R_c</i>), s | 1.4 | 1.0 | 1.2 | 1.0 | | 1.0 | | 1.0 |
| Minimum Green (<i>G_{min}</i>), s | 10 | 35 | 10 | 35 | | 15 | | 15 |
| Start-Up Lost Time (<i>l_t</i>), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Extension of Effective Green (<i>e</i>), s | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Passage (<i>PT</i>), s | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | | 2.0 |
| Recall Mode | Max | Max | Max | Max | | Max | | Max |
| Dual Entry | No | Yes | No | Yes | | Yes | | Yes |
| Walk (<i>Walk</i>), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |
| Pedestrian Clearance Time (<i>PC</i>), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |

| Multimodal Information | EB | | | WB | | | NB | | | SB | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| 85th % Speed / Rest in Walk / Corner Radius | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 |
| Walkway / Crosswalk Width / Length, ft | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 |
| Street Width / Island / Curb, ft | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No |
| Width Outside / Bike Lane / Shoulder, ft | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 |
| Pedestrian Signal / Occupied Parking | No | 0.50 | | No | 0.50 | | No | 0.50 | | No | 0.50 | |

HCS Signalized Intersection Results Summary

| General Information | | | | Intersection Information | |  |
|---------------------|-----------------------------------|---------------|-----------------------------------|--------------------------|----------|---|
| Agency | Compass | | | Duration, h | 0.250 | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '36 Build Existing Timings.xus | | | |
| Project Description | Boundless Residential Development | | | | | |

| Demand Information | EB | | | WB | | | NB | | | SB | | |
|-----------------------|----|-----|----|----|-----|-----|----|----|----|----|---|-----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 57 | 860 | 19 | 75 | 824 | 132 | 42 | 15 | 59 | 97 | 0 | 151 |

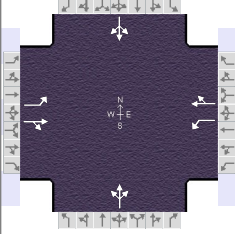
| Signal Information | | | |  | | | | | | | | | | | | | |
|--------------------|------|-----------------|-----|--|------|-----|------|------|-----|-----|------------|-------|-----------------|-----|-----|-----|-----|
| Cycle, s | 96.0 | Reference Phase | 2 | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 |
| Offset, s | 0 | Reference Point | End | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | Force Mode | Fixed | Simult. Gap N/S | On | | | |

| Timer Results | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|-----------------------------------|------|------|------|------|-----|------|-----|------|
| Assigned Phase | 5 | 2 | 1 | 6 | | 8 | | 4 |
| Case Number | 1.1 | 4.0 | 1.1 | 4.0 | | 8.0 | | 8.0 |
| Phase Duration, s | 19.6 | 50.8 | 20.1 | 51.3 | | 25.1 | | 25.1 |
| Change Period, ($Y+R_c$), s | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Max Allow Headway (MAH), s | 3.1 | 0.0 | 3.1 | 0.0 | | 3.3 | | 3.3 |
| Queue Clearance Time (g_s), s | 3.2 | | 3.6 | | | 8.3 | | 17.1 |
| Green Extension Time (g_e), s | 0.0 | 0.0 | 0.1 | 0.0 | | 0.7 | | 0.3 |
| Phase Call Probability | 1.00 | | 1.00 | | | 1.00 | | 1.00 |
| Max Out Probability | 0.00 | | 0.00 | | | 0.00 | | 1.00 |

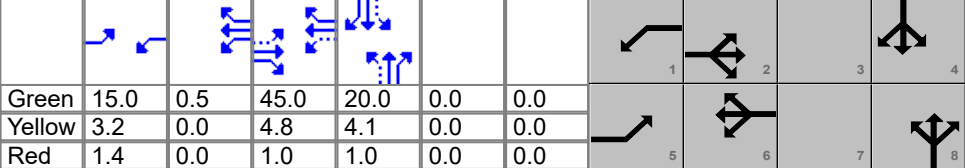
| Movement Group Results | EB | | | WB | | | NB | | | SB | | | |
|---|-------|-------|----|-------|-------|----|----|-------|----|----|---|-------|---|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R | |
| Assigned Movement | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 | |
| Adjusted Flow Rate (v), veh/h | 59 | 906 | | 77 | 986 | | | 120 | | | | 256 | |
| Adjusted Saturation Flow Rate (s), veh/h/ln | 1781 | 1863 | | 1795 | 1839 | | | 1456 | | | | 1522 | |
| Queue Service Time (g_s), s | 1.2 | 45.0 | | 1.6 | 45.5 | | | 0.0 | | | | 8.9 | |
| Cycle Queue Clearance Time (g_c), s | 1.2 | 45.0 | | 1.6 | 45.5 | | | 6.3 | | | | 15.1 | |
| Green Ratio (g/C) | 0.62 | 0.47 | | 0.62 | 0.47 | | | 0.21 | | | | 0.21 | |
| Capacity (c), veh/h | 353 | 873 | | 356 | 872 | | | 354 | | | | 369 | |
| Volume-to-Capacity Ratio (X) | 0.166 | 1.038 | | 0.217 | 1.130 | | | 0.337 | | | | 0.692 | |
| Back of Queue (Q), ft/ln (95 th percentile) | 30 | 961 | | 39 | 1259 | | | 117 | | | | 273 | |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.2 | 37.8 | | 1.6 | 50.0 | | | 4.6 | | | | 10.7 | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.19 | 0.00 | | 0.29 | 0.00 | | | 0.00 | | | | 0.00 | |
| Uniform Delay (d_1), s/veh | 17.5 | 25.5 | | 17.6 | 25.3 | | | 32.4 | | | | 35.9 | |
| Incremental Delay (d_2), s/veh | 1.0 | 40.6 | | 1.4 | 73.1 | | | 2.6 | | | | 10.2 | |
| Initial Queue Delay (d_3), s/veh | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | | | 0.0 | |
| Control Delay (d), s/veh | 18.5 | 66.1 | | 19.0 | 98.3 | | | 35.0 | | | | 46.1 | |
| Level of Service (LOS) | B | F | | B | F | | | C | | | | D | |
| Approach Delay, s/veh / LOS | 63.2 | E | | 92.6 | F | | | 35.0 | C | | | 46.1 | D |
| Intersection Delay, s/veh / LOS | 73.0 | | | | | | E | | | | | | |

| Multimodal Results | EB | | WB | | NB | | SB | |
|----------------------------|------|---|------|---|------|---|------|---|
| Pedestrian LOS Score / LOS | 1.68 | B | 1.68 | B | 1.93 | B | 1.93 | B |
| Bicycle LOS Score / LOS | 2.08 | B | 2.24 | B | 0.68 | A | 0.91 | A |

HCS Signalized Intersection Intermediate Values

| General Information | | | | Intersection Information | |  |
|---------------------|-----------------------------------|---------------|-----------------------------------|--------------------------|----------|---|
| Agency | Compass | | | Duration, h | 0.250 | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '36 Build Existing Timings.xus | | | |
| Project Description | Boundless Residential Development | | | | | |

| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|----|-----|-----|----|----|----|----|---|-----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 57 | 860 | 19 | 75 | 824 | 132 | 42 | 15 | 59 | 97 | 0 | 151 |

| Signal Information | | | |  | | | | | | | | | | | | |
|--------------------|-------|-----------------|-----|--|------|-----|------|------|-----|-----|--|--|--|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | | | | | | |
| Offset, s | 0 | Reference Point | End | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | | | | | | | | | | | | | |

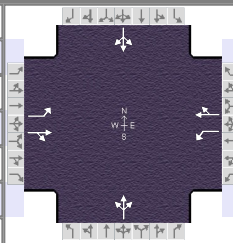
| Saturation Flow / Delay | L | T | R | L | T | R | L | T | R | L | T | R |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Width Adjustment Factor (f_w) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles and Grade Factor (f_{HVg}) | 0.984 | 0.984 | 1.000 | 0.992 | 0.992 | 1.000 | 1.000 | 0.992 | 1.000 | 1.000 | 0.984 | 1.000 |
| Parking Activity Adjustment Factor (f_p) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Bus Blockage Adjustment Factor (f_{bb}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Area Type Adjustment Factor (f_a) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Lane Utilization Adjustment Factor (f_{LU}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Adjustment Factor (f_{LT}) | 0.952 | 0.000 | | 0.952 | 0.000 | | 0.802 | 0.772 | | 0.875 | 0.814 | |
| Right-Turn Adjustment Factor (f_{RT}) | | 0.996 | 0.996 | | 0.976 | 0.976 | | 0.000 | 0.772 | | 0.000 | 0.814 |
| Left-Turn Pedestrian Adjustment Factor (f_{LPb}) | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 | | |
| Right-Turn Ped-Bike Adjustment Factor (f_{Rpb}) | | | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 |
| Work Zone Adjustment Factor (f_{wz}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| DDI Factor (f_{DDI}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$) | 1.00 | | | 1.00 | | | | | | | | |
| Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$) | | | | | | | 1.00 | | | 1.00 | | |
| Movement Saturation Flow Rate (s), veh/h | 1781 | 1823 | 40 | 1795 | 1585 | 254 | 527 | 188 | 741 | 595 | 0 | 927 |
| Proportion of Vehicles Arriving on Green (P) | 0.16 | 0.47 | 0.47 | 0.16 | 0.47 | 0.47 | 0.21 | 0.21 | 0.21 | 0.21 | 0.00 | 0.21 |
| Incremental Delay Factor (k) | 0.50 | 0.50 | | 0.50 | 0.50 | | | 0.50 | | | 0.50 | |

| Signal Timing / Movement Groups | EBL | EBT/R | WBL | WBT/R | NBL | NBT/R | SBL | SBT/R |
|---|------|-------|------|-------|-----|-------|-----|-------|
| Lost Time (t_L) | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Green Ratio (g/C) | 0.63 | 0.47 | 0.63 | 0.47 | | 0.21 | | 0.21 |
| Permitted Saturation Flow Rate (s_p), veh/h/ln | 571 | 0 | 620 | 0 | | 1251 | | 1344 |
| Shared Saturation Flow Rate (s_{sh}), veh/h/ln | | | | | | 1368 | | 1610 |
| Permitted Effective Green Time (g_p), s | 45.0 | 0.0 | 45.0 | 0.0 | | 20.0 | | 20.0 |
| Permitted Service Time (g_u), s | 0.0 | 0.0 | 0.0 | 0.0 | | 4.9 | | 13.7 |
| Permitted Queue Service Time (g_{ps}), s | 0.0 | | 0.0 | | | 0.0 | | 8.9 |
| Time to First Blockage (g_t), s | 0.0 | 0.0 | 0.0 | 0.0 | | 3.5 | | 2.1 |
| Queue Service Time Before Blockage (g_{fs}), s | | | | | | 2.0 | | 2.1 |
| Protected Right Saturation Flow (s_R), veh/h/ln | | | | | | | | |
| Protected Right Effective Green Time (g_R), s | | | | | | | | |

| Multimodal | EB | | WB | | NB | | SB | |
|----------------------------------|--------|-------|--------|-------|--------|-------|--------|-------|
| Pedestrian F_w / F_v | 0.972 | 0.000 | 0.972 | 0.000 | 1.198 | 0.000 | 1.198 | 0.000 |
| Pedestrian F_s / F_{delay} | 0.000 | 0.105 | 0.000 | 0.104 | 0.000 | 0.136 | 0.000 | 0.136 |
| Pedestrian M_{corner} / M_{cw} | 0.00 | | 0.00 | | 0.00 | | 0.00 | |
| Bicycle c_b / d_b | 937.50 | 13.55 | 947.92 | 13.28 | 416.67 | 30.08 | 416.67 | 30.08 |
| Bicycle F_w / F_v | -3.64 | 1.59 | -3.64 | 1.75 | -3.64 | 0.20 | -3.64 | 0.42 |

HCS Signalized Intersection Results Graphical Summary

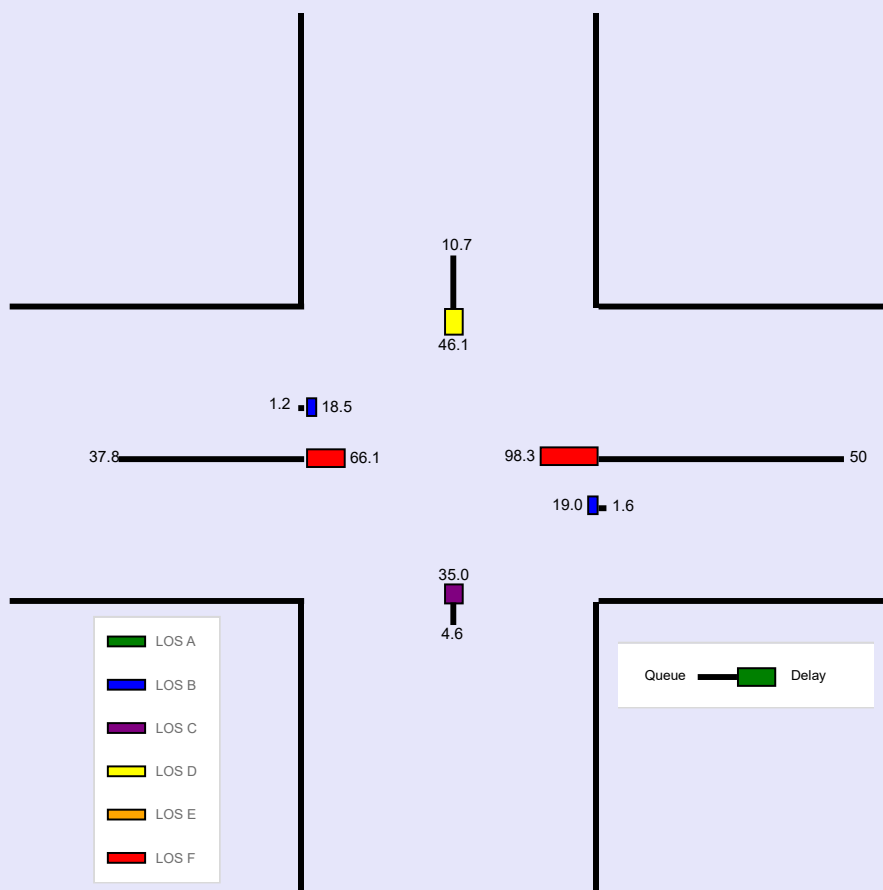
| General Information | | | | Intersection Information | |
|---------------------|-----------------------------------|---------------|----------------|-----------------------------------|----------|
| Agency | Compass | | | Duration, h | 0.250 |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 |
| Intersection | Proprietors Rd & SR-161 | | File Name | PM '36 Build Existing Timings.xus | |
| Project Description | Boundless Residential Development | | | | |



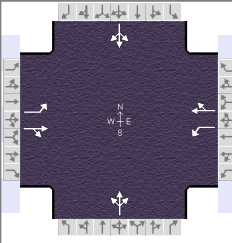
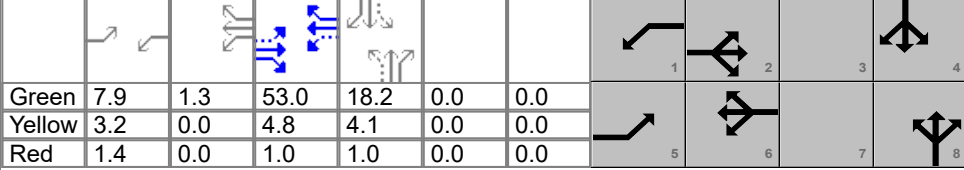
| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|----|-----|-----|----|----|----|----|---|-----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 57 | 860 | 19 | 75 | 824 | 132 | 42 | 15 | 59 | 97 | 0 | 151 |

| Signal Information | | | | Signal Phases | | | | | | | | | |
|--------------------|-------|-----------------|-----|---------------|------|-----|------|------|-----|-----|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | Green | 15.0 | 0.5 | 45.0 | 20.0 | 0.0 | 0.0 | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | |

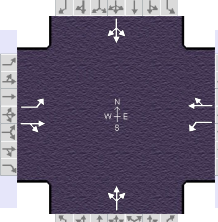
| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|------|------|---|------|------|---|------|------|---|------|------|---|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 30 | 961 | | 39 | 1259 | | | 117 | | | 273 | |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.2 | 37.8 | | 1.6 | 50.0 | | | 4.6 | | | 10.7 | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.19 | 0.00 | | 0.29 | 0.00 | | | 0.00 | | | 0.00 | |
| Control Delay (d), s/veh | 18.5 | 66.1 | | 19.0 | 98.3 | | | 35.0 | | | 46.1 | |
| Level of Service (LOS) | B | F | | B | F | | | C | | | D | |
| Approach Delay, s/veh / LOS | 63.2 | | E | 92.6 | | F | 35.0 | | C | 46.1 | | D |
| Intersection Delay, s/veh / LOS | 73.0 | | | | | | E | | | | | |



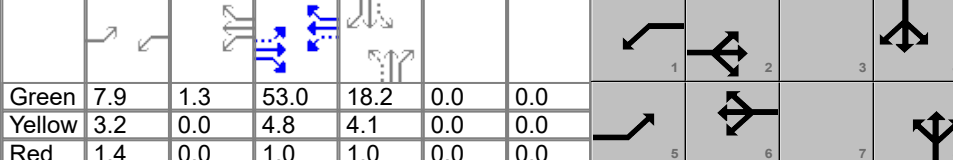
HCS Signalized Intersection Input Data

| General Information | | | | | | Intersection Information | | | | | |  | | | | | | | | | | | | |
|--|-----------------------------------|-----------------|---------------|--|------|--------------------------|----------|------|------|------|--------|---|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Agency | Compass | | | | | Duration, h | 0.250 | | | | | | | | | | | | | | | | | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | | | Area Type | Other | | | | | | | | | | | | | | | | | |
| Jurisdiction | City of Worthington | | Time Period | PM Design Hour | | PHF | 0.97 | | | | | | | | | | | | | | | | | |
| Urban Street | SR-161 | | Analysis Year | 2036 | | Analysis Period | 1 > 7:00 | | | | | | | | | | | | | | | | | |
| Intersection | Proprietors Rd & SR-161 | | File Name | PM '36 Build Optimized Timings.xus | | | | | | | | | | | | | | | | | | | | |
| Project Description | Boundless Residential Development | | | | | | | | | | | | | | | | | | | | | | | |
| Demand Information | | | | EB | | | WB | | | NB | | | SB | | | | | | | | | | | |
| Approach Movement | | | | L | T | R | L | T | R | L | T | R | L | T | R | | | | | | | | | |
| Demand (v), veh/h | | | | 57 | 860 | 19 | 75 | 824 | 132 | 42 | 15 | 59 | 97 | 0 | 151 | | | | | | | | | |
| Signal Information | | | |  | | | | | | | | | | | | | | | | | | | | |
| Cycle, s | 96.0 | Reference Phase | 2 | | | | | | | | | | | | | | | | | | | | | |
| Offset, s | 0 | Reference Point | End | | | | | | | | | | | | | | | | | | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | | | | | | | | | | | | | | | | | | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | Green | 7.9 | 1.3 | 53.0 | 18.2 | 0.0 | 0.0 | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 |
| Traffic Information | | | | EB | | | WB | | | NB | | | SB | | | | | | | | | | | |
| Approach Movement | | | | L | T | R | L | T | R | L | T | R | L | T | R | | | | | | | | | |
| Demand (v), veh/h | | | | 57 | 860 | 19 | 75 | 824 | 132 | 42 | 15 | 59 | 97 | 0 | 151 | | | | | | | | | |
| Initial Queue (Q _b), veh/h | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| Base Saturation Flow Rate (s ₀), veh/h | | | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | | | | | | |
| Parking (N _m), man/h | | | | None | | | None | | | None | | | None | | | | | | | | | | | |
| Heavy Vehicles (P _{HV}), % | | | | 2 | 2 | | 1 | 1 | | | 1 | | | 2 | | | | | | | | | | |
| Ped / Bike / RTOR, /h | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| Buses (N _b), buses/h | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| Arrival Type (AT) | | | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | | | | | | | | |
| Upstream Filtering (I) | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | | | | | | |
| Lane Width (W), ft | | | | 12.0 | 12.0 | | 12.0 | 12.0 | | | 12.0 | | | 12.0 | | | | | | | | | | |
| Turn Bay Length, ft | | | | 160 | 0 | | 135 | 0 | | | 0 | | | 0 | | | | | | | | | | |
| Grade (P _g), % | | | | | 0 | | | 0 | | | 0 | | | 0 | | | | | | | | | | |
| Speed Limit, mi/h | | | | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | | | | | | | | | |
| Phase Information | | | | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | | | | | | | | | | | | | |
| Maximum Green (G _{max}) or Phase Split, s | | | | 16.0 | 41.0 | 16.0 | 41.0 | | 39.0 | | | 39.0 | | | | | | | | | | | | |
| Yellow Change Interval (Y), s | | | | 3.2 | 4.8 | 3.9 | 4.8 | | 4.1 | | | 4.1 | | | | | | | | | | | | |
| Red Clearance Interval (R _c), s | | | | 1.4 | 1.0 | 1.2 | 1.0 | | 1.0 | | | 1.0 | | | | | | | | | | | | |
| Minimum Green (G _{min}), s | | | | 10 | 35 | 10 | 35 | | 15 | | | 15 | | | | | | | | | | | | |
| Start-Up Lost Time (l _t), s | | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | | | | | | | | | | |
| Extension of Effective Green (e), s | | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | | | | | | | | | | |
| Passage (P _T), s | | | | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | | 2.0 | | | | | | | | | | | | | |
| Recall Mode | | | | Off | Min | Off | Min | | Off | | Off | | | | | | | | | | | | | |
| Dual Entry | | | | No | Yes | No | Yes | | Yes | | Yes | | | | | | | | | | | | | |
| Walk (Walk), s | | | | | 0.0 | | 0.0 | | 0.0 | | 0.0 | | | | | | | | | | | | | |
| Pedestrian Clearance Time (P _C), s | | | | | 0.0 | | 0.0 | | 0.0 | | 0.0 | | | | | | | | | | | | | |
| Multimodal Information | | | | EB | | | WB | | | NB | | | SB | | | | | | | | | | | |
| 85th % Speed / Rest in Walk / Corner Radius | | | | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | 0.0 | No | 25.0 | | | | | | | | | |
| Walkway / Crosswalk Width / Length, ft | | | | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | 9.0 | 12.0 | 0.0 | | | | | | | | | |
| Street Width / Island / Curb, ft | | | | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | 0.0 | 0 | No | | | | | | | | | |
| Width Outside / Bike Lane / Shoulder, ft | | | | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | 12.0 | 5.0 | 2.0 | | | | | | | | | |
| Pedestrian Signal / Occupied Parking | | | | No | 0.50 | No | 0.50 | No | 0.50 | No | 0.50 | No | 0.50 | | | | | | | | | | | |

HCS Signalized Intersection Results Summary

| General Information | | | | Intersection Information | |  |
|---------------------|-----------------------------------|---------------|------------------------------------|--------------------------|----------|---|
| Agency | Compass | | | Duration, h | 0.250 | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '36 Build Optimized Timings.xus | | | |
| Project Description | Boundless Residential Development | | | | | |

| Demand Information | EB | | | WB | | | NB | | | SB | | |
|-----------------------|----|-----|----|----|-----|-----|----|----|----|----|---|-----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 57 | 860 | 19 | 75 | 824 | 132 | 42 | 15 | 59 | 97 | 0 | 151 |

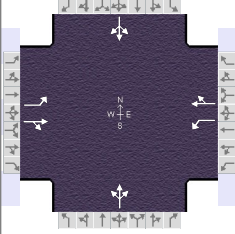
| Signal Information | | | |  | | | | | | | | | | | | | | |
|--------------------|------|-----------------|-----|--|-----|-----|------|------|-----|-----|---------------|-----|-----------------|-----|------------|-------|-----------------|----|
| Cycle, s | 96.0 | Reference Phase | 2 | Green | 7.9 | 1.3 | 53.0 | 18.2 | 0.0 | 0.0 | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | |
| Offset, s | 0 | Reference Point | End | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | Uncoordinated | No | Simult. Gap E/W | On | Force Mode | Fixed | Simult. Gap N/S | On |

| Timer Results | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|-----------------------------------|------|------|------|------|-----|------|-----|------|
| Assigned Phase | 5 | 2 | 1 | 6 | | 8 | | 4 |
| Case Number | 1.1 | 4.0 | 1.1 | 4.0 | | 8.0 | | 8.0 |
| Phase Duration, s | 12.5 | 58.8 | 13.8 | 60.1 | | 23.3 | | 23.3 |
| Change Period, ($Y+R_c$), s | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Max Allow Headway (MAH), s | 3.1 | 0.0 | 3.1 | 0.0 | | 3.3 | | 3.3 |
| Queue Clearance Time (g_s), s | 3.2 | | 3.5 | | | 8.5 | | 17.5 |
| Green Extension Time (g_e), s | 0.1 | 0.0 | 0.1 | 0.0 | | 0.8 | | 0.7 |
| Phase Call Probability | 0.79 | | 0.87 | | | 1.00 | | 1.00 |
| Max Out Probability | 0.00 | | 0.00 | | | 0.00 | | 0.00 |

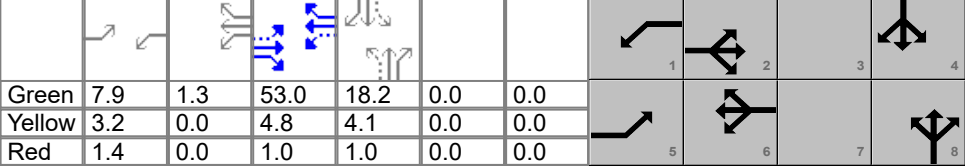
| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|-------|-------|----|-------|-------|----|-------|---|----|-------|---|----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Assigned Movement | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Adjusted Flow Rate (v), veh/h | 59 | 906 | | 77 | 986 | | 120 | | | 256 | | |
| Adjusted Saturation Flow Rate (s), veh/h/ln | 1781 | 1863 | | 1795 | 1839 | | 1446 | | | 1527 | | |
| Queue Service Time (g_s), s | 1.2 | 40.7 | | 1.5 | 48.1 | | 0.0 | | | 9.0 | | |
| Cycle Queue Clearance Time (g_c), s | 1.2 | 40.7 | | 1.5 | 48.1 | | 6.5 | | | 15.5 | | |
| Green Ratio (g/C) | 0.63 | 0.55 | | 0.64 | 0.57 | | 0.19 | | | 0.19 | | |
| Capacity (c), veh/h | 247 | 1029 | | 318 | 1041 | | 326 | | | 343 | | |
| Volume-to-Capacity Ratio (X) | 0.238 | 0.881 | | 0.243 | 0.947 | | 0.367 | | | 0.746 | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 32 | 654 | | 34 | 781 | | 109 | | | 247 | | |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.3 | 25.7 | | 1.3 | 31.0 | | 4.3 | | | 9.7 | | |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.20 | 0.00 | | 0.25 | 0.00 | | 0.00 | | | 0.00 | | |
| Uniform Delay (d_1), s/veh | 20.4 | 18.7 | | 16.3 | 19.5 | | 33.9 | | | 37.6 | | |
| Incremental Delay (d_2), s/veh | 0.2 | 10.8 | | 0.1 | 17.7 | | 0.3 | | | 1.2 | | |
| Initial Queue Delay (d_3), s/veh | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | | 0.0 | | |
| Control Delay (d), s/veh | 20.5 | 29.5 | | 16.4 | 37.1 | | 34.2 | | | 38.8 | | |
| Level of Service (LOS) | C | C | | B | D | | C | | | D | | |
| Approach Delay, s/veh / LOS | 28.9 | C | | 35.6 | D | | 34.2 | C | | 38.8 | D | |
| Intersection Delay, s/veh / LOS | 33.2 | | | | | | C | | | | | |

| Multimodal Results | EB | | WB | | NB | | SB | |
|----------------------------|------|---|------|---|------|---|------|---|
| Pedestrian LOS Score / LOS | 1.66 | B | 1.66 | B | 1.94 | B | 1.94 | B |
| Bicycle LOS Score / LOS | 2.08 | B | 2.24 | B | 0.68 | A | 0.91 | A |

HCS Signalized Intersection Intermediate Values

| General Information | | | | Intersection Information | |  |
|---------------------|-----------------------------------|---------------|------------------------------------|--------------------------|----------|---|
| Agency | Compass | | | Duration, h | 0.250 | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '36 Build Optimized Timings.xus | | | |
| Project Description | Boundless Residential Development | | | | | |

| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|----|-----|-----|----|----|----|----|---|-----|
| Approach Movement | L | T | R | L | T | R | L | T | R | L | T | R |
| Demand (v), veh/h | 57 | 860 | 19 | 75 | 824 | 132 | 42 | 15 | 59 | 97 | 0 | 151 |

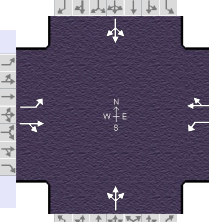
| Signal Information | | | |  | | | | | | | | | | | | | | |
|--------------------|------|-----------------|-----|--|-----|-----|------|------|-----|-----|---------------|-----|-----------------|-----|------------|-------|-----------------|----|
| Cycle, s | 96.0 | Reference Phase | 2 | Green | 7.9 | 1.3 | 53.0 | 18.2 | 0.0 | 0.0 | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | |
| Offset, s | 0 | Reference Point | End | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | Uncoordinated | No | Simult. Gap E/W | On | Force Mode | Fixed | Simult. Gap N/S | On |

| Saturation Flow / Delay | L | T | R | L | T | R | L | T | R | L | T | R |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Width Adjustment Factor (f_w) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles and Grade Factor (f_{HVg}) | 0.984 | 0.984 | 1.000 | 0.992 | 0.992 | 1.000 | 1.000 | 0.992 | 1.000 | 1.000 | 0.984 | 1.000 |
| Parking Activity Adjustment Factor (f_p) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Bus Blockage Adjustment Factor (f_{bb}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Area Type Adjustment Factor (f_a) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Lane Utilization Adjustment Factor (f_{LU}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Adjustment Factor (f_{LT}) | 0.952 | 0.000 | | 0.952 | 0.000 | | 0.792 | 0.767 | | 0.874 | 0.817 | |
| Right-Turn Adjustment Factor (f_{RT}) | | 0.996 | 0.996 | | 0.976 | 0.976 | | 0.000 | 0.767 | | 0.000 | 0.817 |
| Left-Turn Pedestrian Adjustment Factor (f_{LPB}) | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 | | |
| Right-Turn Ped-Bike Adjustment Factor (f_{RPB}) | | | 1.000 | | | 1.000 | | | 1.000 | | | 1.000 |
| Work Zone Adjustment Factor (f_{WZ}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| DDI Factor (f_{DDI}) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$) | 1.00 | | | 1.00 | | | | | | | | |
| Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$) | | | | | | | 1.00 | | | 1.00 | | |
| Movement Saturation Flow Rate (s), veh/h | 1781 | 1823 | 40 | 1795 | 1585 | 254 | 523 | 187 | 735 | 597 | 0 | 930 |
| Proportion of Vehicles Arriving on Green (P) | 0.08 | 0.55 | 0.55 | 0.09 | 0.57 | 0.57 | 0.19 | 0.19 | 0.19 | 0.19 | 0.00 | 0.19 |
| Incremental Delay Factor (k) | 0.04 | 0.50 | | 0.04 | 0.50 | | | 0.04 | | | 0.04 | |

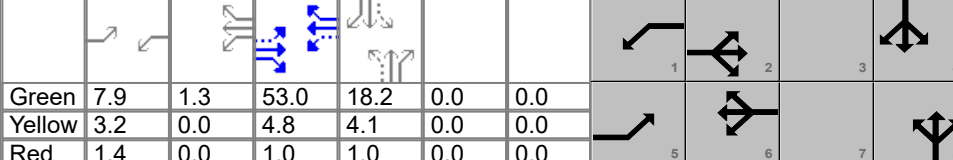
| Signal Timing / Movement Groups | EBL | EBT/R | WBL | WBT/R | NBL | NBT/R | SBL | SBT/R |
|---|------|-------|------|-------|-----|-------|-----|-------|
| Lost Time (t_L) | 4.6 | 5.8 | 5.1 | 5.8 | | 5.1 | | 5.1 |
| Green Ratio (g/C) | 0.63 | 0.55 | 0.64 | 0.57 | | 0.19 | | 0.19 |
| Permitted Saturation Flow Rate (s_p), veh/h/ln | 571 | 0 | 620 | 0 | | 1251 | | 1344 |
| Shared Saturation Flow Rate (s_{sh}), veh/h/ln | | | | | | 1358 | | 1610 |
| Permitted Effective Green Time (g_p), s | 53.0 | 0.0 | 53.0 | 0.0 | | 18.3 | | 18.3 |
| Permitted Service Time (g_u), s | 4.2 | 0.0 | 12.3 | 0.0 | | 2.7 | | 11.8 |
| Permitted Queue Service Time (g_{ps}), s | 4.2 | | 5.8 | | | 0.0 | | 9.0 |
| Time to First Blockage (g_t), s | 0.0 | 0.0 | 0.0 | 0.0 | | 3.5 | | 1.7 |
| Queue Service Time Before Blockage (g_{fs}), s | | | | | | 2.0 | | 1.7 |
| Protected Right Saturation Flow (s_R), veh/h/ln | | | | | | | | |
| Protected Right Effective Green Time (g_R), s | | | | | | | | |

| Multimodal | EB | | WB | | NB | | SB | |
|----------------------------------|---------|-------|---------|-------|--------|-------|--------|-------|
| Pedestrian F_w / F_v | 0.972 | 0.000 | 0.972 | 0.000 | 1.198 | 0.000 | 1.198 | 0.000 |
| Pedestrian F_s / F_{delay} | 0.000 | 0.091 | 0.000 | 0.088 | 0.000 | 0.138 | 0.000 | 0.138 |
| Pedestrian M_{corner} / M_{cw} | 0.00 | | 0.00 | | 0.00 | | 0.00 | |
| Bicycle c_b / d_b | 1104.63 | 9.62 | 1132.01 | 9.04 | 380.21 | 31.48 | 380.21 | 31.48 |
| Bicycle F_w / F_v | -3.64 | 1.59 | -3.64 | 1.75 | -3.64 | 0.20 | -3.64 | 0.42 |

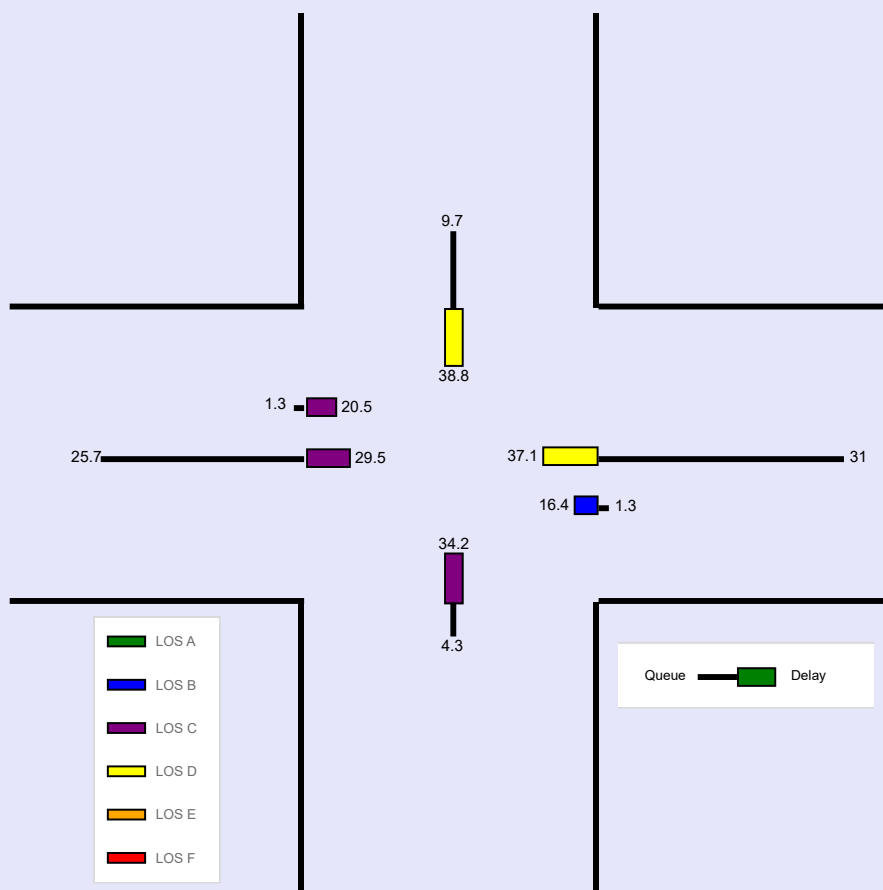
HCS Signalized Intersection Results Graphical Summary

| General Information | | | | Intersection Information | |  |
|---------------------|-----------------------------------|---------------|------------------------------------|--------------------------|----------|---|
| Agency | Compass | | | Duration, h | 0.250 | |
| Analyst | MVK | Analysis Date | Jun 15, 2026 | Area Type | Other | |
| Jurisdiction | City of Worthington | Time Period | PM Design Hour | PHF | 0.97 | |
| Urban Street | SR-161 | Analysis Year | 2036 | Analysis Period | 1 > 7:00 | |
| Intersection | Proprietors Rd & SR-161 | File Name | PM '36 Build Optimized Timings.xus | | | |
| Project Description | Boundless Residential Development | | | | | |

| Demand Information | EB | | | WB | | | NB | | | SB | | |
|---------------------|----|-----|----|----|-----|-----|----|----|----|----|---|-----|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Demand (v), veh/h | 57 | 860 | 19 | 75 | 824 | 132 | 42 | 15 | 59 | 97 | 0 | 151 |

| Signal Information | | | |  | | | | | | | | | | |
|--------------------|-------|-----------------|-----|--|-----|-----|------|------|-----|-----|--|--|--|--|
| Cycle, s | 96.0 | Reference Phase | 2 | Green | 7.9 | 1.3 | 53.0 | 18.2 | 0.0 | 0.0 | | | | |
| Offset, s | 0 | Reference Point | End | Yellow | 3.2 | 0.0 | 4.8 | 4.1 | 0.0 | 0.0 | | | | |
| Uncoordinated | No | Simult. Gap E/W | On | Red | 1.4 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | | | | |
| Force Mode | Fixed | Simult. Gap N/S | On | | | | | | | | | | | |

| Movement Group Results | EB | | | WB | | | NB | | | SB | | |
|---|------|------|---|------|------|---|------|------|---|------|---|------|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| Approach Movement | | | | | | | | | | | | |
| Back of Queue (Q), ft/ln (95 th percentile) | 32 | 654 | | 34 | 781 | | | 109 | | | | 247 |
| Back of Queue (Q), veh/ln (95 th percentile) | 1.3 | 25.7 | | 1.3 | 31.0 | | | 4.3 | | | | 9.7 |
| Queue Storage Ratio (RQ) (95 th percentile) | 0.20 | 0.00 | | 0.25 | 0.00 | | | 0.00 | | | | 0.00 |
| Control Delay (d), s/veh | 20.5 | 29.5 | | 16.4 | 37.1 | | | 34.2 | | | | 38.8 |
| Level of Service (LOS) | C | C | | B | D | | | C | | | | D |
| Approach Delay, s/veh / LOS | 28.9 | | C | 35.6 | | D | 34.2 | | C | 38.8 | | D |
| Intersection Delay, s/veh / LOS | 33.2 | | | | | | C | | | | | |



Section 6

Roundabout Analysis

HCS Roundabouts Report

General Information

Site Information

| | | | | |
|---------------------|-----------|--|---------------------------|-------------------------|
| Analyst | MVK | | Intersection | 1x1 Proposed Roundabout |
| Agency or Co. | Compass | | E/W Street Name | E-W Local Street |
| Date Performed | 6/15/2026 | | N/S Street Name | Proprietors Rd |
| Analysis Year | 2036 | | Analysis Time Period, hrs | 0.25 |
| Time Analyzed | AM Peak | | Peak Hour Factor | 0.93 |
| Project Description | | | Jurisdiction | City of Worthington |

Volume Adjustments and Site Characteristics

| Approach | EB | | | | WB | | | | NB | | | | SB | | | |
|-------------------------------------|------|----|-----|---|------|---|-----|----|------|---|-----|---|------|----|-----|----|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | | | | | | | | | | | | | | | | |
| Number of Lanes (N) | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Lane Assignment | | | LTR | | | | LTR | | | | LTR | | | | LTR | |
| Volume (V), veh/h | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 83 | 0 | 0 | 15 | 0 | 0 | 59 | 62 | 61 |
| Percent Heavy Vehicles, % | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| Flow Rate (v _{PCE}), pc/h | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 90 | 0 | 0 | 16 | 0 | 0 | 65 | 68 | 67 |
| Right-Turn Bypass | None | | | | None | | | | None | | | | None | | | |
| Conflicting Lanes | 1 | | | | 1 | | | | 1 | | | | 1 | | | |
| Pedestrians Crossing, p/h | 0 | | | | 0 | | | | 0 | | | | 0 | | | |
| Proportion of CAVs, % | 0 | | | | | | | | | | | | | | | |

Critical and Follow-Up Headway Adjustment

| Approach | EB | | | WB | | | NB | | | SB | | |
|----------------------|------|--------|--------|------|--------|--------|------|--------|--------|------|--------|--------|
| | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass |
| Critical Headway, s | | 4.9763 | | | 4.9763 | | | 4.9763 | | | 4.9763 | |
| Follow-Up Headway, s | | 2.6087 | | | 2.6087 | | | 2.6087 | | | 2.6087 | |

Flow Computations, Capacity and v/c Ratios

| Approach | EB | | | WB | | | NB | | | SB | | |
|--|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|
| | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass |
| Entry Flow (v _e), pc/h | | 16 | | | 90 | | | 16 | | | 200 | |
| Entry Volume, veh/h | | 16 | | | 89 | | | 16 | | | 196 | |
| Circulating Flow (v _c), pc/h | 133 | | | 32 | | | 81 | | | 0 | | |
| Exiting Flow (v _{ex}), pc/h | 65 | | | 67 | | | 122 | | | 68 | | |
| Capacity (c _{PCE}), pc/h | | 1205 | | | 1336 | | | 1271 | | | 1380 | |
| Capacity (c), veh/h | | 1181 | | | 1322 | | | 1258 | | | 1353 | |
| v/c Ratio (x) | | 0.01 | | | 0.07 | | | 0.01 | | | 0.14 | |

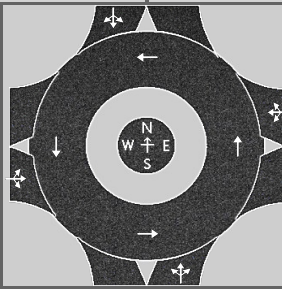
Delay and Level of Service

| Approach | EB | | | WB | | | NB | | | SB | | |
|---|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|
| | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass |
| Lane Control Delay (d), s/veh | | 3.2 | | | 3.3 | | | 3.0 | | | 3.8 | |
| Lane LOS | | A | | | A | | | A | | | A | |
| 95% Queue Length, Q ₉₅ (veh) | | 0.0 | | | 0.2 | | | 0.0 | | | 0.5 | |
| 95% Queue Length, Q ₉₅ (ft) | | 0.0 | | | 5.0 | | | 0.0 | | | 12.7 | |
| Approach Delay, s/veh LOS | 3.2 | | A | 3.3 | | A | 3.0 | | A | 3.8 | | A |
| Intersection Delay, s/veh LOS | 3.6 | | | | | | A | | | | | |

HCS Roundabouts Report

General Information

| | |
|---------------------|-----------|
| Analyst | MVK |
| Agency or Co. | Compass |
| Date Performed | 6/15/2026 |
| Analysis Year | 2036 |
| Time Analyzed | PM Peak |
| Project Description | |



Site Information

| | |
|---------------------------|-------------------------|
| Intersection | 1x1 Proposed Roundabout |
| E/W Street Name | E-W Local Street |
| N/S Street Name | Proprietors Rd |
| Analysis Time Period, hrs | 0.25 |
| Peak Hour Factor | 0.97 |
| Jurisdiction | City of Worthington |

Volume Adjustments and Site Characteristics

| Approach | EB | | | | WB | | | | NB | | | | SB | | | |
|-------------------------------------|------|----|-----|---|------|---|-----|----|------|---|-----|---|------|----|-----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | | | | | | | | | | | | | | | | |
| Number of Lanes (N) | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Lane Assignment | | | LTR | | | | LTR | | | | LTR | | | | LTR | |
| Volume (V), veh/h | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 63 | 0 | 0 | 27 | 0 | 0 | 82 | 6 | 6 |
| Percent Heavy Vehicles, % | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| Flow Rate (v _{PCE}), pc/h | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 66 | 0 | 0 | 28 | 0 | 0 | 86 | 6 | 6 |
| Right-Turn Bypass | None | | | | None | | | | None | | | | None | | | |
| Conflicting Lanes | 1 | | | | 1 | | | | 1 | | | | 1 | | | |
| Pedestrians Crossing, p/h | 0 | | | | 0 | | | | 0 | | | | 0 | | | |
| Proportion of CAVs, % | 0 | | | | | | | | | | | | | | | |

Critical and Follow-Up Headway Adjustment

| Approach | EB | | | WB | | | NB | | | SB | | |
|----------------------|------|--------|--------|------|--------|--------|------|--------|--------|------|--------|--------|
| | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass |
| Critical Headway, s | | 4.9763 | | | 4.9763 | | | 4.9763 | | | 4.9763 | |
| Follow-Up Headway, s | | 2.6087 | | | 2.6087 | | | 2.6087 | | | 2.6087 | |

Flow Computations, Capacity and v/c Ratios

| Approach | EB | | | WB | | | NB | | | SB | | |
|--|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|
| | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass |
| Entry Flow (v _e), pc/h | | 27 | | | 66 | | | 28 | | | 98 | |
| Entry Volume, veh/h | | 26 | | | 65 | | | 28 | | | 96 | |
| Circulating Flow (v _c), pc/h | 92 | | | 55 | | | 113 | | | 0 | | |
| Exiting Flow (v _{ex}), pc/h | 86 | | | 6 | | | 121 | | | 6 | | |
| Capacity (c _{PCE}), pc/h | | 1256 | | | 1305 | | | 1230 | | | 1380 | |
| Capacity (c), veh/h | | 1232 | | | 1292 | | | 1218 | | | 1353 | |
| v/c Ratio (x) | | 0.02 | | | 0.05 | | | 0.02 | | | 0.07 | |

Delay and Level of Service

| Approach | EB | | | WB | | | NB | | | SB | | |
|---|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|
| | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass |
| Lane Control Delay (d), s/veh | | 3.1 | | | 3.2 | | | 3.1 | | | 3.2 | |
| Lane LOS | | A | | | A | | | A | | | A | |
| 95% Queue Length, Q ₉₅ (veh) | | 0.1 | | | 0.2 | | | 0.1 | | | 0.2 | |
| 95% Queue Length, Q ₉₅ (ft) | | 2.5 | | | 5.0 | | | 2.5 | | | 5.1 | |
| Approach Delay, s/veh LOS | 3.1 | | A | 3.2 | | A | 3.1 | | A | 3.2 | | A |
| Intersection Delay, s/veh LOS | 3.2 | | | | | | A | | | | | |