

Hunnewell Elementary School Feasibility Study

SMMA
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PROJECT MANAGEMENT



SBC Meeting

June 13, 2019



Hunnewell Elementary School Feasibility Study

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Site Design
Drop Off / Pick up Scenarios
Parking
Traffic Analysis



Hunnewell Site: Why it works as a School Site

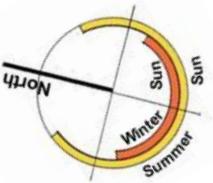
- During the early 2000's Hunnewell had 362 students & was 18-section school as recent as 2002
Projected new enrollment is 365 students
- Important geographic location in town – where many students live...
Redistricting will “bring back” many former Hunnewell households
- Highly “walkable” neighborhood school adjacent to pathways
- Site acreage is well within state averages, and on par with recent (and larger) schools in peer communities, incl. Newton, Belmont

Hunnewell Site: Why it works as a School Site

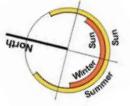
Why is the total square footage doubling?

- Robust Special Education program (partially mandated by state)
- Building code requirements (mandated by the state)
- Modern teaching practice (the critical core of the educational plan)
- Real sized gym, cafeterias, media centers (does not translate into doubling of staff, parking needs, etc.)
- Nearby assets such as the Library and Cameron Street parking are often highly favorable and create a campus quality
- Open space goals and protected area at the back of the site are a treasure and highly desirable for schools

Constraints



Parking Comparison: Scenario A



Building Footprint:

47,000 SF = +/-18.8%

Onsite Vehicular Circulation & Parking:

+/- 45 Spaces

Lot Coverage Shown:

TBD 29-32% > 25%



Future Building & Site Considerations





Site Circulation: AM Buses



Site Circulation: AM Autos



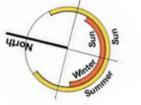
Site Circulation: PM Autos



Site Circulation: PM Buses



Parking Comparison: Scenario A



Building Footprint:

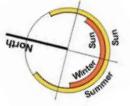
47,000 SF = +/-18.8%

Onsite Vehicular Circulation & Parking:
+/- 47 Spaces

Lot Coverage Shown:
TBD 29-32% > 25%



Parking Comparison: Scenario B



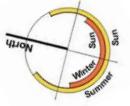
Building Footprint:
47,000 SF = +/-18.8%

Onsite Vehicular Circulation & Parking:
+/- 60 Spaces

Lot Coverage Shown:
TBD 32-35% > 25%



Parking Comparison: Scenario B



Building Footprint:

47,000 SF = +/- 18.8%

Onsite Vehicular Circulation & Parking:
+/- 60 Spaces

Lot Coverage Shown:
TBD 32-35% > 25%

Study Area



Evaluation Methodology

The traffic evaluation consisted of **three primary tasks**:

1. Data Compilation

- **Observe Existing Conditions**
- **Compile Traffic Data** at eight intersections

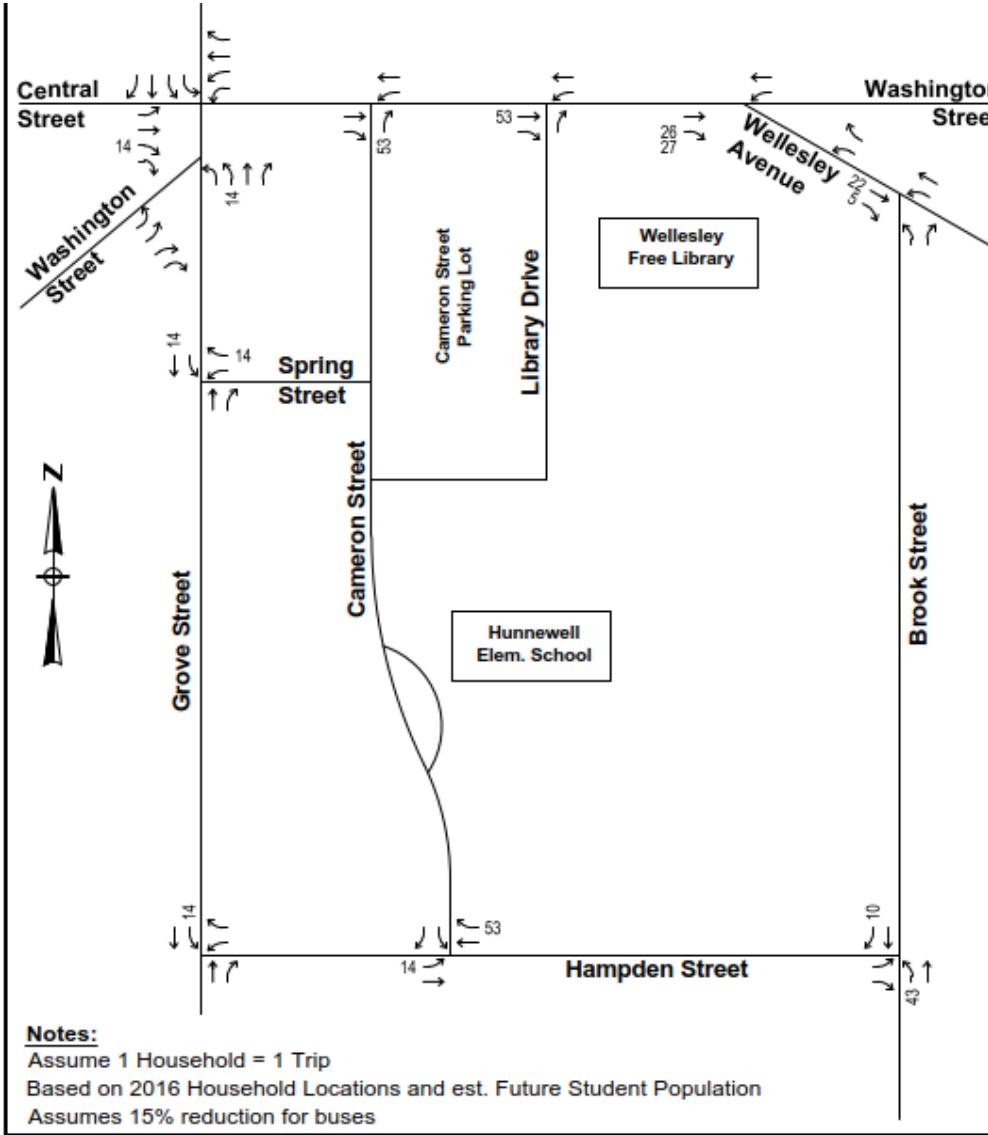
2. Trip Generation and Distribution

- How many cars **are redistributed** as a result of redistricting and increased school size?

3. Traffic Analysis Conditions

1. **2018 Existing**
2. **2023 No-Build and Build – Early Hunnewell**
3. **2026 No-Build and Build – Late Hunnewell**

New School Trips



Level of Service Summary

2023 (Early Hunnewell)

| INTERSECTION | Existing Conditions | | | | | | | | 2023 No-Build Conditions | | | | | | | | 2023 Build Conditions | | | | | | | |
|--|---------------------|--------------|-------------|--------------|--------------|--------------|-------------|--------------|--------------------------|--------------|-------------|--------------|--------------|--------------|-------------|--------------|-----------------------|--------------|-------------|--------------|--------------|--------------|-------------|--------------|
| | AM Peak Hour | | | | PM Peak Hour | | | | AM Peak Hour | | | | PM Peak Hour | | | | AM Peak Hour | | | | PM Peak Hour | | | |
| | LOS | Delay | v/c | 95th % Queue | LOS | Delay | v/c | 95th % Queue | LOS | Delay | v/c | 95th % Queue | LOS | Delay | v/c | 95th % Queue | LOS | Delay | v/c | 95th % Queue | LOS | Delay | v/c | 95th % Queue |
| Library Lot at Washington | | | | | | | | | | | | | | | | | | | | | | | | |
| Washington Street WB L | A | 0.9 | 0.02 | 2 | A | 1.3 | 0.04 | 3 | A | 0.3 | 0.03 | 2 | A | 1.3 | 0.04 | 3 | A | 1.1 | 0.03 | 2 | A | 1.3 | 0.04 | 3 |
| Library Lot NB R | A | 0.0 | 0.00 | 0 | B | 10.9 | 0.10 | 8 | B | 10.3 | 0.04 | 3 | B | 10.1 | 0.09 | 7 | B | 10.3 | 0.04 | 3 | B | 10.4 | 0.09 | 8 |
| Grove Street at Spring Street (Unsignalized) | | | | | | | | | | | | | | | | | | | | | | | | |
| Spring Street WB LR | B | 12.2 | 0.24 | 23 | B | 12.0 | 0.30 | 32 | B | 12.5 | 0.26 | 26 | B | 12.3 | 0.33 | 36 | B | 12.9 | 0.29 | 31 | B | 12.7 | 0.36 | 40 |
| Grove Street SB LT | A | 1.3 | 0.02 | 1 | A | 0.7 | 0.10 | 1 | A | 1.3 | 0.02 | 1 | A | 0.7 | 0.01 | 1 | A | 1.1 | 0.02 | 1 | A | 0.7 | 0.01 | 1 |
| Grove Street at Hampden Street (Unsignalized) | | | | | | | | | | | | | | | | | | | | | | | | |
| Hampden Street WB LR | B | 14.0 | 0.26 | 26 | B | 13.2 | 0.32 | 34 | B | 14.6 | 0.28 | 29 | B | 13.8 | 0.34 | 38 | B | 15.2 | 0.3 | 31 | B | 14.5 | 0.36 | 41 |
| Grove Street SB LT | A | 3.5 | 0.04 | 3 | A | 1.0 | 0.02 | 1 | A | 3.6 | 0.05 | 4 | A | 1.0 | 0.02 | 2 | A | 4.2 | 0.06 | 5 | A | 1.6 | 0.03 | 3 |
| Hampden Street at Cameron Street (Unsignalized) | | | | | | | | | | | | | | | | | | | | | | | | |
| Hampden Street EB LT | A | 3.9 | 0.13 | 12 | A | 4.1 | 0.05 | 4 | A | 4.0 | 0.14 | 13 | A | 4.1 | 0.05 | 4 | A | 4.6 | 0.17 | 16 | A | 4.8 | 0.07 | 6 |
| Cameron Street SB LR | B | 12.8 | 0.08 | 6 | A | 10.0 | 0.02 | 2 | B | 13.1 | 0.09 | 7 | B | 10.0 | 0.02 | 2 | B | 14.0 | 0.1 | 8 | B | 10.4 | 0.02 | 2 |
| Brook Street at Hampden Street (Unsignalized) | | | | | | | | | | | | | | | | | | | | | | | | |
| Hampden Street EB LR | B | 14.9 | 0.39 | 47 | B | 10.0 | 0.09 | 7 | C | 15.8 | 0.43 | 53 | B | 10.2 | 0.09 | 8 | C | 19.0 | 0.49 | 67 | B | 10.7 | 0.1 | 9 |
| Brook Street NB LT | A | 6.5 | 0.15 | 13 | A | 6.5 | 0.09 | 8 | A | 6.6 | 0.16 | 14 | A | 6.6 | 0.1 | 8 | A | 7.1 | 0.2 | 19 | A | 7 | 0.13 | 11 |
| Washington Street at Grove Street and Central Street (Signalized) | | | | | | | | | | | | | | | | | | | | | | | | |
| Central Street EB LT/ TR | D | 52.7 | 0.9 | 558 | D | 35.8 | 0.74 | 302 | E | 59.5 | 0.95 | 601 | D | 36.6 | 0.77 | 326 | E | 63.7 | 0.97 | 620 | D | 37.4 | 0.78 | 341 |
| Washington Street WB L | F | 1402.5 | 3.92 | 510 | F | 1903.8 | 5.10 | 686 | F | 1479.3 | 4.10 | 532 | F | 2018.8 | 5.36 | 716 | F | 1479.3 | 4.1 | 532 | F | 2018.9 | 5.36 | 716 |
| Washington Street WB TR | B | 11.6 | 0.51 | 428 | A | 6.9 | 0.53 | 392 | B | 12.0 | 0.54 | 460 | A | 7.1 | 0.56 | 423 | B | 12.0 | 0.54 | 460 | A | 7.1 | 0.55 | 423 |
| Grove Street NB LTR | F | 103.6 | 0.99 | 403 | F | 174.4 | 1.21 | 351 | F | 121.1 | 1.05 | 428 | F | 205.6 | 1.29 | 373 | F | 143.6 | 1.12 | 462 | F | 248.2 | 1.39 | 401 |
| Grove Street SB LTR | D | 42.7 | 0.35 | 105 | D | 38.0 | 0.39 | 90 | D | 42.9 | 0.36 | 109 | D | 38.5 | 0.41 | 93 | D | 42.8 | 0.36 | 109 | D | 38.5 | 0.41 | 93 |
| Washington Street NEB BR/R | D | 45.5 | 0.71 | 290 | C | 25.9 | 0.32 | 126 | D | 47.3 | 0.75 | 328 | C | 26.4 | 0.34 | 132 | D | 47.3 | 0.75 | 328 | C | 26.5 | 0.34 | 132 |
| Overall | F | 159.8 | 1.74 | - | F | 375.3 | 2.34 | - | F | 170.3 | 1.82 | - | F | 399.7 | 2.45 | - | F | 173.2 | 1.85 | - | F | 400.9 | 2.47 | - |
| Wellesley Avenue at Washington Street (Signalized) | | | | | | | | | | | | | | | | | | | | | | | | |
| Washington Street EB T | C | 34.6 | 0.91 | 643 | C | 31.5 | 0.74 | 329 | D | 43.0 | 0.96 | 688 | C | 30.8 | 0.74 | 369 | D | 52.3 | 0.99 | 725 | C | 31.9 | 0.77 | 408 |
| Washington Street EB R | A | 2.1 | 0.46 | 26 | A | 4.2 | 0.27 | 30 | A | 2.2 | 0.49 | 26 | A | 4.2 | 0.29 | 31 | A | 2.2 | 0.50 | 26 | A | 4.3 | 0.30 | 31 |
| Washington Street WB LT/T | B | 15.9 | 0.52 | 152 | C | 21.5 | 0.7 | 214 | B | 16.7 | 1.05 | 165 | C | 22.1 | 0.73 | 233 | B | 17.1 | 1.05 | 168 | C | 22.0 | 0.73 | 238 |
| Wellesley Avenue NB LR | D | 36.2 | 0.88 | 503 | C | 34.5 | 0.78 | 561 | D | 42.4 | 0.93 | 538 | D | 40.2 | 0.84 | 600 | D | 42.4 | 0.93 | 538 | D | 42.3 | 0.85 | 600 |
| Overall | C | 21.8 | 0.91 | - | C | 23.2 | 0.79 | - | C | 25.8 | 0.96 | - | C | 24.8 | 0.84 | - | C | 28.5 | 0.98 | - | C | 25.3 | 0.84 | - |
| Cameron Street at Washington Street (Signalized) | | | | | | | | | | | | | | | | | | | | | | | | |
| Washington Street EB T/ TR | A | 8.7 | 0.74 | 210 | A | 4.8 | 0.36 | 94 | A | 9.5 | 0.77 | 292 | A | 4.9 | 0.38 | 97 | A | 9.4 | 0.77 | 261 | A | 4.9 | 0.38 | 97 |
| Washington Street WB T/ LT | A | 3.1 | 0.31 | 134 | A | 4.3 | 0.42 | 187 | A | 3.2 | 0.33 | 143 | A | 4.4 | 0.44 | 200 | A | 3.2 | 0.33 | 143 | A | 4.4 | 0.44 | 200 |
| Cameron Street NB R | D | 39.8 | 0.09 | 0 | D | 35.0 | 0.06 | 0 | D | 39.8 | 0.00 | 0 | D | 35.4 | 0.09 | 0 | D | 4.5 | 0.17 | 0 | D | 35.9 | 0.14 | 0 |
| Overall | A | 8.8 | 0.60 | - | A | 6.2 | 0.40 | - | A | 9.3 | 0.63 | - | A | 6.7 | 0.42 | - | B | 10.5 | 0.63 | - | A | 7.9 | 0.42 | - |
| Notes: | | | | | | | | | | | | | | | | | | | | | | | | |
| - LOS = Level of Service | | | | | | | | | | | | | | | | | | | | | | | | |
| - Delay is expressed in seconds per vehicle | | | | | | | | | | | | | | | | | | | | | | | | |
| - v/c = volume to capacity ratio | | | | | | | | | | | | | | | | | | | | | | | | |

Level of Service Summary

2026 (Late Hunnewell)

| INTERSECTION | Existing Conditions | | | | | | | | 2026 No-Build Conditions | | | | | | | | 2026 Build Conditions | | | | | | | |
|--|---------------------|--------------|-------------|--------------|--------------|--------------|-------------|--------------|--------------------------|--------------|-------------|--------------|--------------|--------------|-------------|--------------|-----------------------|--------------|-------------|--------------|--------------|--------------|-------------|--------------|
| | AM Peak Hour | | | | PM Peak Hour | | | | AM Peak Hour | | | | PM Peak Hour | | | | AM Peak Hour | | | | PM Peak Hour | | | |
| | LOS | Delay | v/c | 95th % Queue | LOS | Delay | v/c | 95th % Queue | LOS | Delay | v/c | 95th % Queue | LOS | Delay | v/c | 95th % Queue | LOS | Delay | v/c | 95th % Queue | LOS | Delay | v/c | 95th % Queue |
| Library Lot at Washington | | | | | | | | | | | | | | | | | | | | | | | | |
| Washington Street WB L | A | 0.9 | 0.02 | 2 | A | 1.3 | 0.04 | 3 | A | 1.0 | 0.03 | 2 | A | 1.3 | 0.04 | 3 | A | 1.1 | 0.03 | 2 | A | 1.3 | 0.04 | 3 |
| Library Lot NB R | A | 0.0 | 0.00 | 0 | B | 10.9 | 0.10 | 8 | B | 10.5 | 0.04 | 3 | B | 10.2 | 0.09 | 8 | B | 10.5 | 0.04 | 3 | B | 10.1 | 0.09 | 7 |
| Grove Street at Spring Street (Unsignalized) | | | | | | | | | | | | | | | | | | | | | | | | |
| Spring Street WB LR | B | 12.2 | 0.24 | 23 | B | 12.0 | 0.30 | 32 | B | 12.7 | 0.27 | 27 | B | 12.5 | 0.34 | 37 | B | 13.1 | 0.31 | 33 | B | 12.9 | 0.37 | 42 |
| Grove Street SB LT | A | 1.3 | 0.02 | 1 | A | 0.7 | 0.10 | 1 | A | 1.3 | 0.02 | 1 | A | 0.07 | 0.01 | 1 | A | 1.1 | 0.02 | 1 | A | 0.6 | 0.01 | 1 |
| Grove Street at Hampden Street (Unsignalized) | | | | | | | | | | | | | | | | | | | | | | | | |
| Hampden Street WB LR | B | 14.0 | 0.26 | 26 | B | 13.2 | 0.32 | 34 | C | 15.1 | 0.3 | 31 | B | 14.1 | 0.36 | 41 | B | 15.7 | 0.31 | 33 | B | 14.9 | 0.38 | 44 |
| Grove Street SB LT | A | 3.5 | 0.04 | 3 | A | 1.0 | 0.02 | 1 | A | 3.6 | 0.05 | 4 | A | 1.0 | 0.02 | 2 | A | 4.2 | 0.06 | 5 | A | 1.6 | 0.03 | 3 |
| Hampden Street at Cameron Street (Unsignalized) | | | | | | | | | | | | | | | | | | | | | | | | |
| Hampden Street EB LT | A | 3.9 | 0.13 | 12 | A | 4.1 | 0.05 | 4 | A | 4.0 | 0.15 | 13 | A | 4.2 | 0.06 | 5 | A | 4.6 | 0.18 | 16 | A | 4.8 | 0.08 | 6 |
| Cameron Street SB LR | B | 12.8 | 0.08 | 6 | A | 10.0 | 0.02 | 2 | B | 13.3 | 0.09 | 7 | B | 10.1 | 0.02 | 2 | B | 14.3 | 0.1 | 8 | B | 10.4 | 0.03 | 2 |
| Brook Street at Hampden Street (Unsignalized) | | | | | | | | | | | | | | | | | | | | | | | | |
| Hampden Street EB LR | B | 14.9 | 0.39 | 47 | B | 10.0 | 0.09 | 7 | C | 16.6 | 0.45 | 58 | B | 10.2 | 0.1 | 8 | C | 20.2 | 0.52 | 74 | B | 10.8 | 0.11 | 9 |
| Brook Street NB LT | A | 6.5 | 0.15 | 13 | A | 6.5 | 0.09 | 8 | A | 6.6 | 0.16 | 14 | A | 6.6 | 0.1 | 8 | A | 7.1 | 0.2 | 19 | A | 7 | 0.14 | 12 |
| Washington Street at Grove Street and Central Street (Signalized) | | | | | | | | | | | | | | | | | | | | | | | | |
| Central Street EB LT/ TR | D | 52.7 | 0.9 | 558 | D | 35.8 | 0.74 | 302 | E | 65.9 | 0.98 | 631 | D | 37.3 | 0.78 | 343 | E | 71.3 | 1 | 648 | D | 37.8 | 0.8 | 358 |
| Washington Street WB L | F | 1402.5 | 3.92 | 510 | F | 1903.8 | 5.10 | 686 | F | 1548.0 | 4.25 | 549 | F | 2125.5 | 5.59 | 733 | F | 1548.0 | 4.25 | 549 | F | 2125.7 | 5.59 | 733 |
| Washington Street WB TR | B | 11.6 | 0.51 | 428 | A | 6.9 | 0.53 | 392 | B | 12.3 | 0.55 | 480 | A | 7.3 | 0.57 | 442 | B | 12.3 | 0.55 | 480 | A | 7.2 | 0.57 | 442 |
| Grove Street NB LTR | F | 103.6 | 0.99 | 403 | F | 174.4 | 1.21 | 351 | F | 126.9 | 1.07 | 443 | F | 227.7 | 1.34 | 384 | F | 153.4 | 1.15 | 477 | F | 274.2 | 1.45 | 413 |
| Grove Street SB LTR | D | 42.7 | 0.35 | 105 | D | 38.0 | 0.39 | 90 | D | 42.9 | 0.36 | 108 | D | 38.9 | 0.43 | 95 | D | 42.8 | 0.36 | 108 | D | 38.9 | 0.42 | 95 |
| Washington Street NEB BR/R | D | 45.5 | 0.71 | 290 | C | 25.9 | 0.32 | 126 | D | 48.7 | 0.78 | 348 | C | 26.8 | 0.35 | 136 | D | 48.7 | 0.78 | 348 | C | 27 | 0.36 | 136 |
| Overall | F | 159.8 | 1.74 | - | F | 375.3 | 2.34 | - | F | 180.2 | 1.88 | - | F | 421.1 | 2.52 | - | F | 183.9 | 1.91 | - | F | 422.6 | 2.53 | - |
| Wellesley Avenue at Washington Street (Signalized) | | | | | | | | | | | | | | | | | | | | | | | | |
| Washington Street EB T | C | 34.6 | 0.91 | 643 | C | 31.5 | 0.74 | 329 | D | 50.1 | 0.99 | 717 | C | 30.2 | 0.74 | 388 | E | 59.9 | 1.02 | 751 | C | 31.7 | 0.77 | 426 |
| Washington Street EB R | A | 2.1 | 0.46 | 26 | A | 4.2 | 0.27 | 30 | A | 2.2 | 0.50 | 26 | A | 4.2 | 0.29 | 31 | A | 2.3 | 0.52 | 27 | A | 4.3 | 0.31 | 32 |
| Washington Street WB LT/ T | B | 15.9 | 0.52 | 152 | C | 21.5 | 0.7 | 214 | B | 17.3 | 1.08 | 173 | C | 22.3 | 0.74 | 251 | B | 17.7 | 1.08 | 175 | C | 22.4 | 0.74 | 257 |
| Wellesley Avenue NB LR | D | 36.2 | 0.88 | 503 | C | 34.5 | 0.78 | 561 | D | 48.0 | 0.95 | 559 | D | 45.3 | 0.88 | 625 | D | 48.0 | 0.95 | 559 | D | 48.1 | 0.89 | 625 |
| Overall | C | 21.8 | 0.91 | - | C | 23.2 | 0.79 | - | C | 29.2 | 0.99 | - | C | 26.1 | 0.86 | - | C | 32.1 | 1.01 | - | C | 26.9 | 0.87 | - |
| Cameron Street at Washington Street (Signalized) | | | | | | | | | | | | | | | | | | | | | | | | |
| Washington Street EB T/ TR | A | 8.7 | 0.74 | 210 | A | 4.8 | 0.36 | 94 | B | 10.0 | 0.80 | 318 | A | 4.9 | 0.39 | 101 | B | 10.1 | 0.80 | 288 | A | 4.9 | 0.39 | 100 |
| Washington Street WB T/ LT | A | 3.1 | 0.31 | 134 | A | 4.3 | 0.42 | 187 | A | 3.2 | 0.34 | 148 | A | 4.5 | 0.46 | 207 | A | 3.2 | 0.34 | 148 | A | 4.5 | 0.46 | 207 |
| Cameron Street NB R | D | 39.8 | 0.09 | 0 | D | 35.0 | 0.06 | 0 | D | 39.8 | 0.10 | 0 | D | 35.7 | 0.09 | 0 | D | 40.6 | 0.17 | 0 | D | 36.2 | 0.14 | 0 |
| Overall | A | 8.8 | 0.60 | - | A | 6.2 | 0.40 | - | A | 9.6 | 0.65 | - | A | 6.8 | 0.43 | - | B | 10.9 | 0.65 | - | A | 7.9 | 0.43 | - |
| Notes: | | | | | | | | | | | | | | | | | | | | | | | | |
| - LOS = Level of Service | | | | | | | | | | | | | | | | | | | | | | | | |
| - Delay is expressed in seconds per vehicle | | | | | | | | | | | | | | | | | | | | | | | | |
| - v/c = volume to capacity ratio | | | | | | | | | | | | | | | | | | | | | | | | |

Conclusion

- Unsignalized Intersections
 - Operate at LOS C or better with minor increases in delay (≤ 4 seconds) and queueing (approx. 1 vehicle)
- Signalized Intersections
 - Pre-existing conditions operate with significant delay and queuing. Additional delays added to the Grove Street northbound movement.
 - Minor increases in overall intersection delay (1-4 seconds) for both 2023 and 2026 conditions.

Hunnewell Elementary School Feasibility Study

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PROJECT MANAGEMENT



Swing Space



SBC Meetings: Swing Space Evaluation Timeline

- **June 13th** : Authorize Additional Services for Swing Space Evaluation
- **July 11th** : Review Traffic Data and Updated Swing Space Options
- **July 25th** : Review Swing Space Options and Feasibility Solution to Proceed to PBC and Advisory

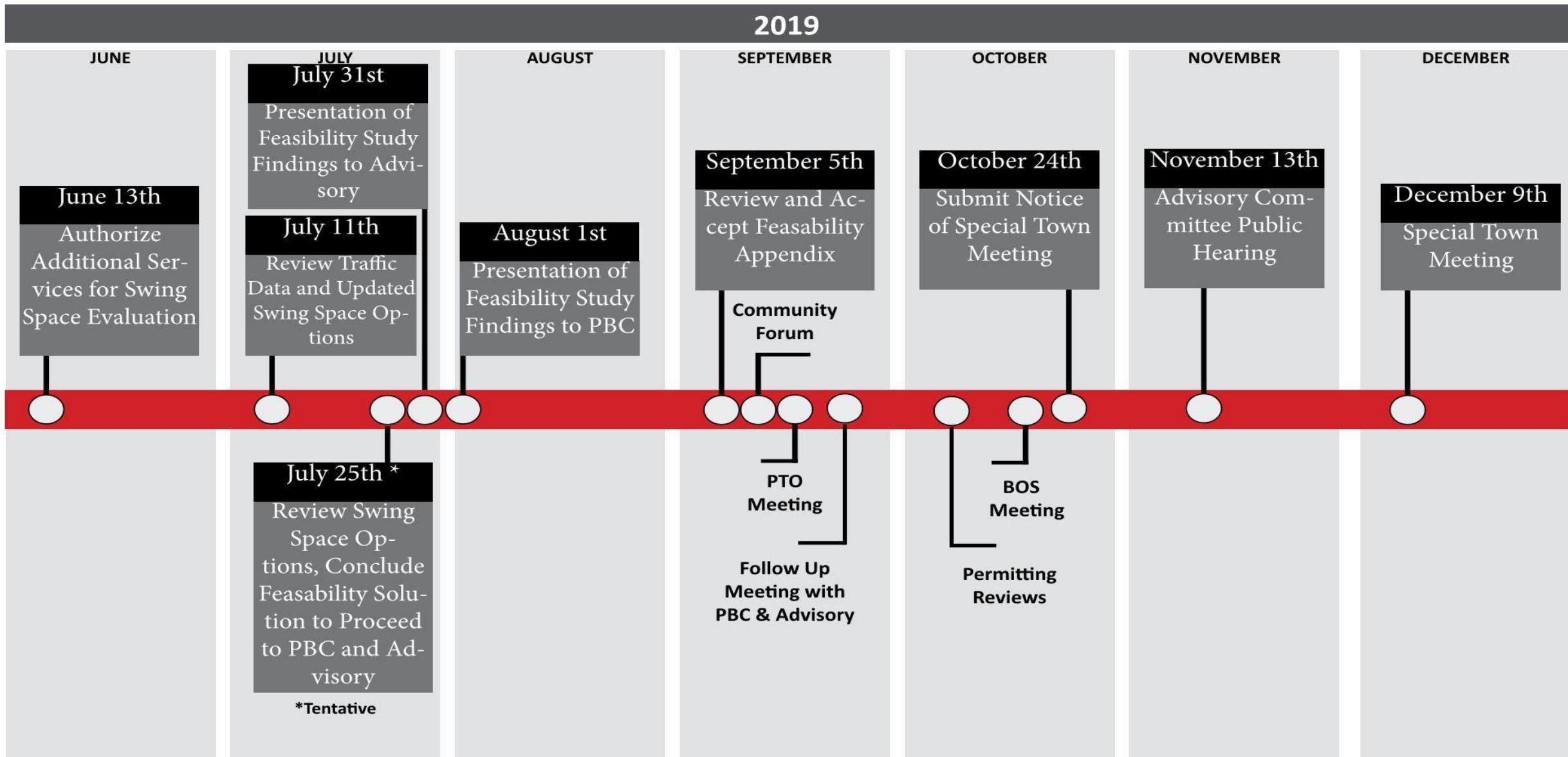
Next Steps to Town Meeting

- **August 8th** : Presentation of Feasibility Study Finding to PBC
- **August TBD**: Presentation of Feasibility Study Finding to Advisory

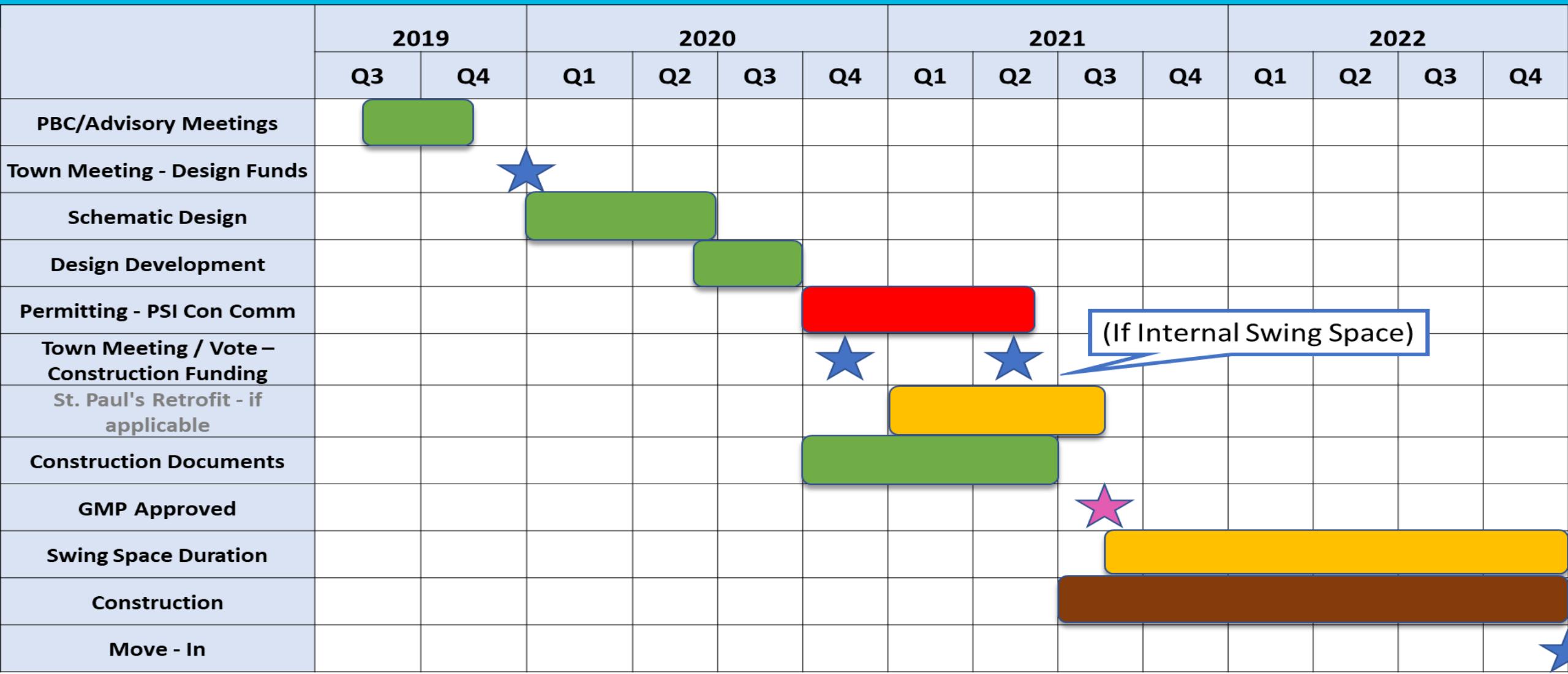
HUNNEWELL ELEMENTARY SCHOOL

FEASIBILITY STUDY WORK PLAN

UPDATE July 11, 2019



Hunnewell Elementary School Project Timeline



Stay Connected!

**Follow the Hunnewell project or subscribe to updates:
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**Meetings available online:
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Thank-You!

