

Hunnewell Elementary School Feasibility Study



SBC Meeting

June 13, 2019



Hunnewell Elementary School Feasibility Study



Site Design
Drop Off / Pick up Scenarios
Parking
Traffic Analysis



Hunnewell Site: Why it works as a School Site

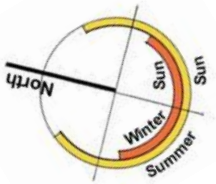
- During the early 2000's Hunnewell had 362 students & was 18-section school as recent as 2002
Projected new enrollment is 365 students
- Important geographic location in town – where many students live...
Redistricting will “bring back” many former Hunnewell households
- Highly “walkable” neighborhood 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

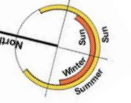
Why is the total square footage doubling?

- 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:

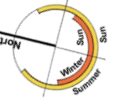
+/- 45 Spaces

Lot Coverage Shown:

TBD 29-32% > 25%

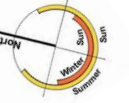


Future Building & Site Considerations

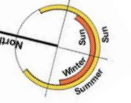




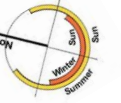
Site Circulation: AM Buses



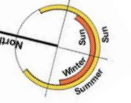
Site Circulation: AM Autos



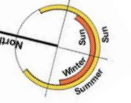
Site Circulation: PM Autos



Site Circulation: PM Buses



Parking Comparison: Scenario A



Building Footprint:

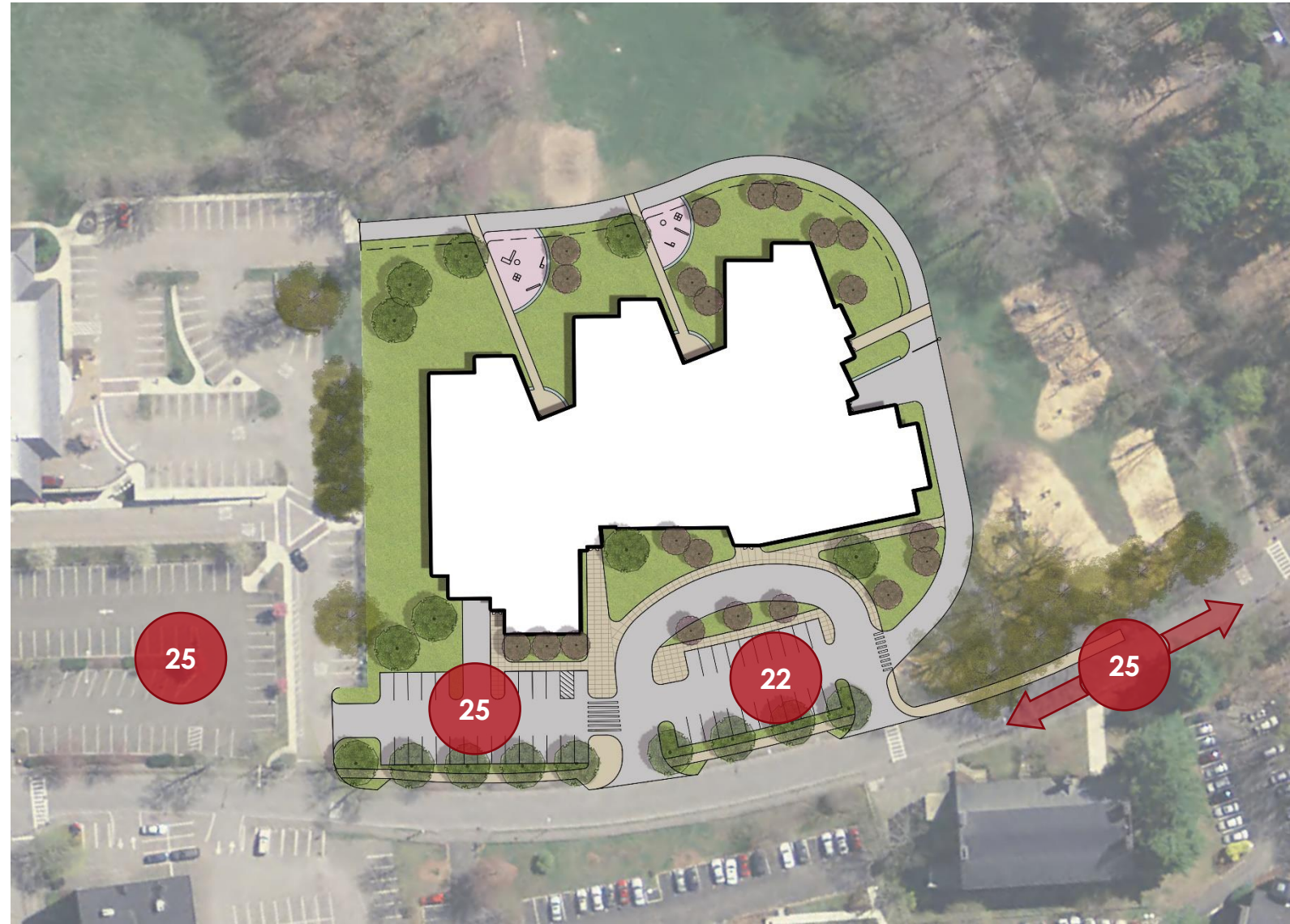
47,000 SF = +/-18.8%

Onsite Vehicular Circulation & Parking:

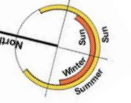
+/- 47 Spaces

Lot Coverage Shown:

TBD 29-32% > 25%



Parking Comparison: Scenario B



Building Footprint:

47,000 SF = +/-18.8%

Onsite Vehicular Circulation & Parking:

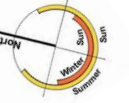
+/- 60 Spaces

Lot Coverage Shown:

TBD 32-35% > 25%



Parking Comparison: Scenario B



Building Footprint:

47,000 SF = +/-18.8%

Onsite Vehicular Circulation & Parking:

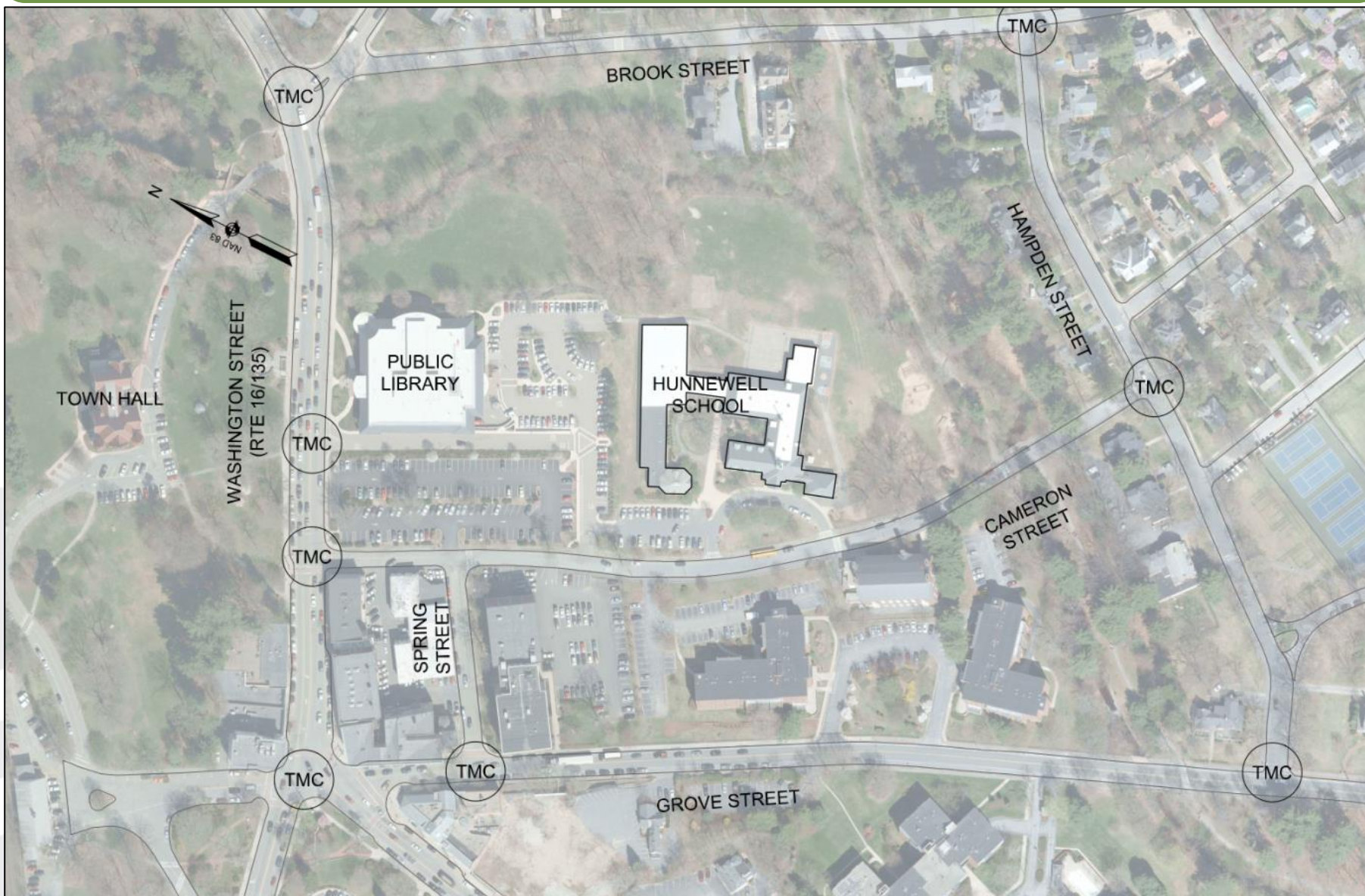
+/- 60 Spaces

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

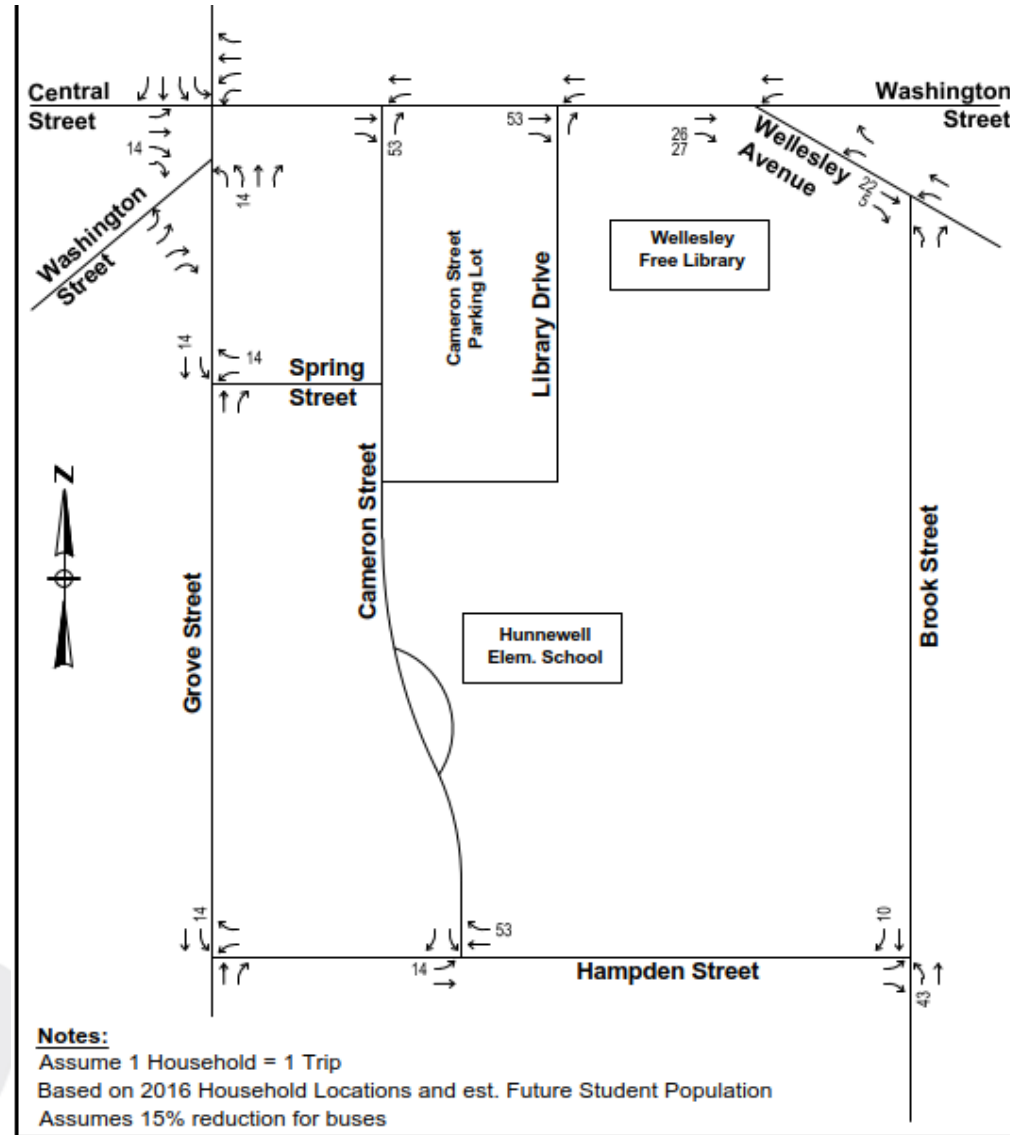
2. Trip Generation and Distribution

- 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



Swing Space



SBC Meetings: Swing Space Evaluation Timeline

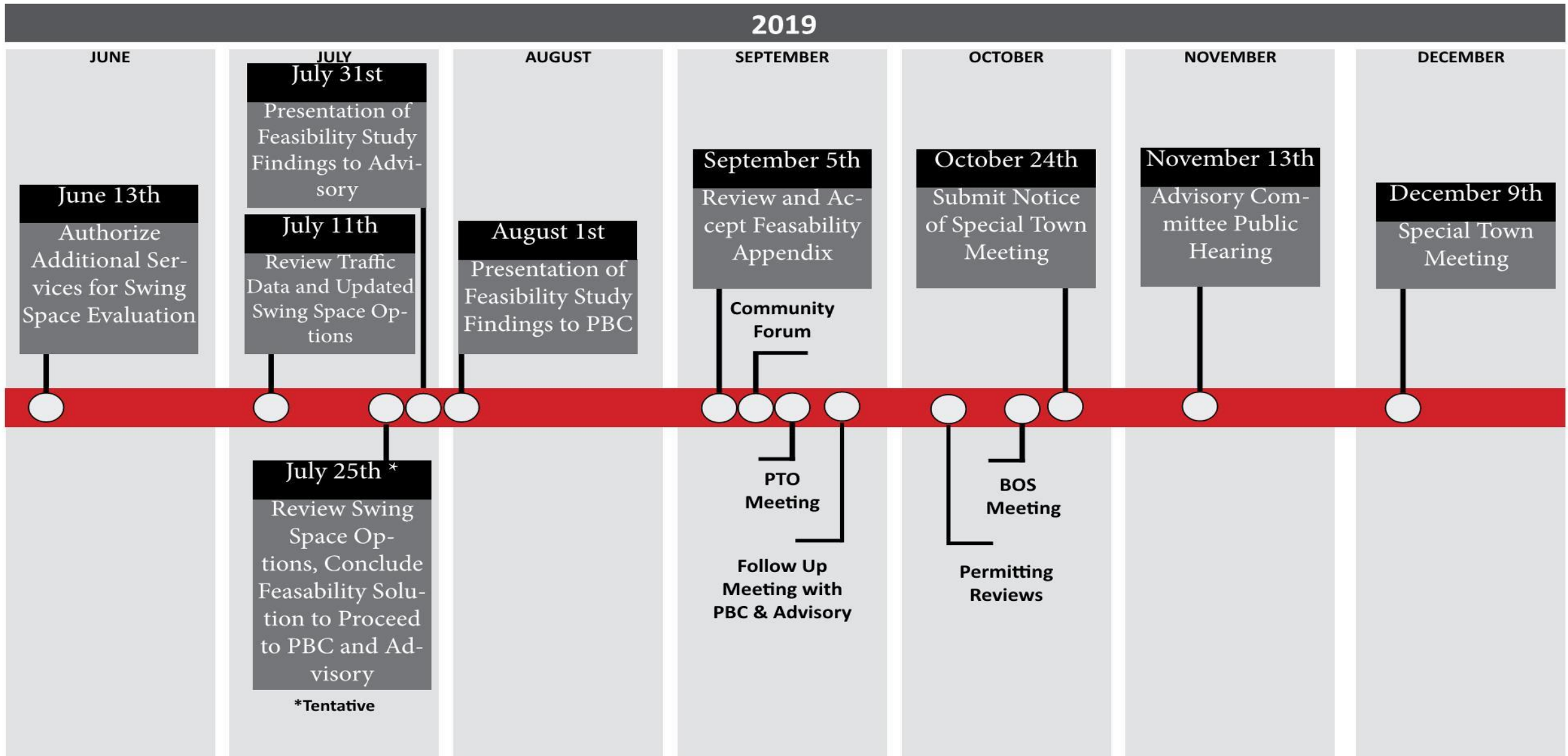
- **June 13th** : Authorize Additional Services for Swing Space Evaluation
- **July 11th** : Review Traffic Data and Updated Swing Space Options
- **July 25th** : Review Swing Space Options and Feasibility Solution to Proceed to PBC and Advisory

Next Steps to Town Meeting

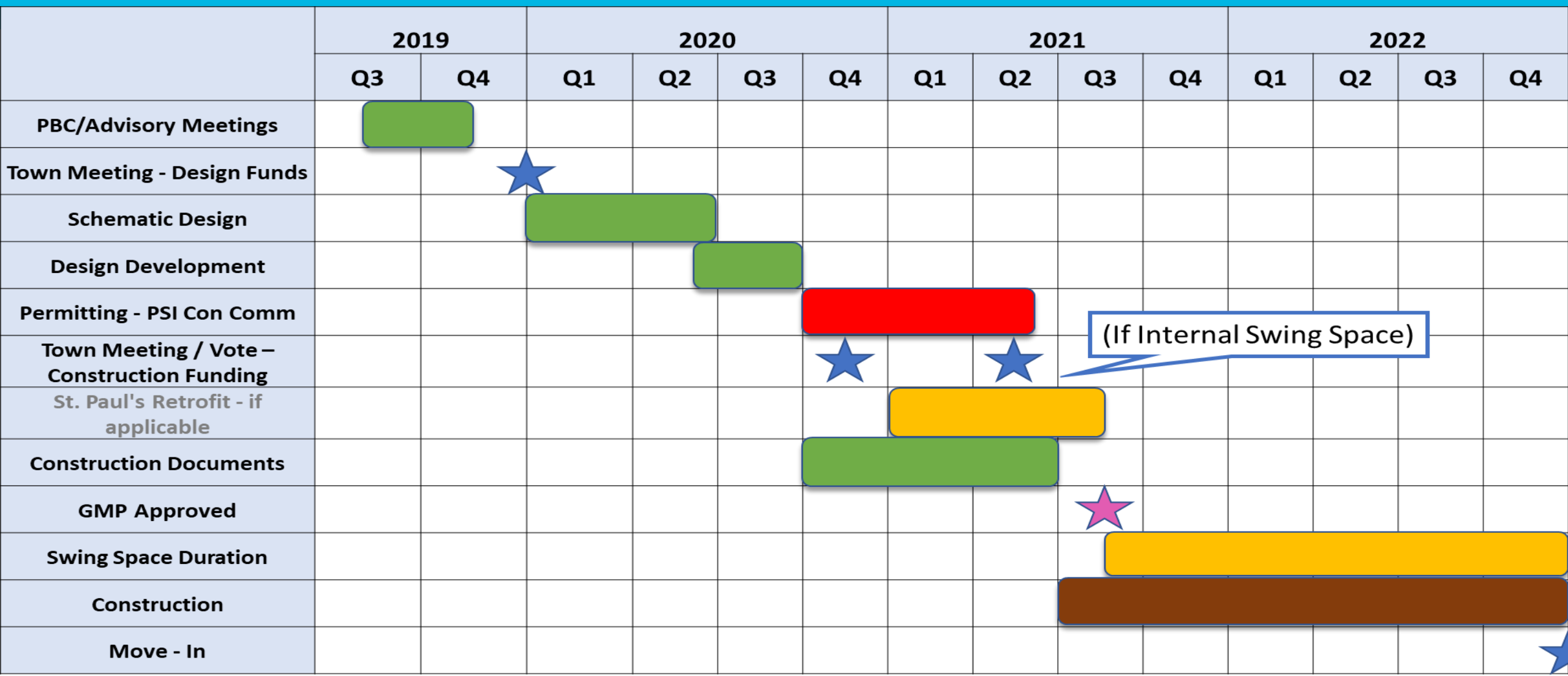
- **August 8th** : Presentation of Feasibility Study Finding to PBC
- **August TBD**: Presentation of Feasibility Study Finding to Advisory

HUNNEWELL ELEMENTARY SCHOOL FEASIBILITY STUDY WORK PLAN

UPDATE July 11, 2019



Hunnewell Elementary School Project Timeline



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Meetings available online:
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Hunnewell Elementary School Feasibility Study



Thank-You!

