



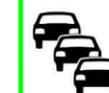
Crash Data

Crash Locations

Source: PennDOT 2013-15 & UDPD 2011-16

	Crashes Total	Crashes at Intersections	Crashes at Mid-block
Fort Washington Ave	68	50	18
Summit Ave	20	8	12
Madison Ave	4	2	2

Note: Above data includes Municipal and State data from different time periods. Not all crashes are reported to State. State crash data is used to calculate a crash rate of 3.81 crashes per million vehicle miles traveled on Fort Washington Ave. This is higher than the expected crash rate of 2.18 crashes per million vehicle miles traveled for this type of roadway. Full crash data details are confidential pursuant to Pa. C.S. §3754 and 23 U.S.C. § 409.



Average Annual Daily Traffic

Source: DVRPC 2012-2014

Count Locations

	ADT	AM Peak	PM Peak
Highland Ave	6,300	500	500
Fort Washington Ave	4,000	400	500
Summit Ave	900	90	90
Madison Ave	500	40	40
Pennsylvania Ave	21,000	2,100	1,800



Vehicle Speed Study

Source: UDPD 2017

Study Locations

	85th Percentile Speed (MPH)		
	NB	SB	Avg
Fort Washington Ave #1	44	42	43
Fort Washington Ave #2	40	44	43
Summit Ave #1	36	34	35
Summit Ave #2	37	35	36

Note: The 85th percentile is shown for Northbound, Southbound, and Average vehicle speeds. An 85th percentile of 43 mph indicates that 85% of vehicles drive under 43 mph and 15% of vehicles drive over 43 mph. The 85th percentile is one of many performance measures used in vehicle speed studies.

School Zone & Congestion during end of school day

UDPD Reported 20*
State Reported 3
Run. red light 2
Distracted driver 1

*2 out of 20 crashes include pedestrians

Sight lines obstructed from Summit Ave due to parked cars during end of school day

Sight lines along Fort Washington Ave are obstructed from the side streets of Montgomery Ave, Spring Ave, and Prospect Ave by shrubs, parked cars, garbage cans.

UDPD Reported 5
State Reported 3
Proc. w/o clear. 3

Pedestrian and vehicle crossing of Fort Washington Ave difficult at Montgomery Ave, Spring Ave, and Prospect Ave due to high vehicle speeds.

UDPD Reported 13
State Reported 4
Improper Turn 1
Proc. w/o clear. 3

UDPD Reported 8
State Reported 2
Run. stop sign 1
Proc. w/o clear. 1

State Reported Crashes 6
Run. red light 1
Improper turn 4
Rear end 1

State Reported Crashes 2
Run. red light 1
Proc. w/o clear. 1

UDPD Reported 1

Only existing intersection with full crosswalks and ADA ramps.

UDPD Reported 2

Prioritize sidewalk completion on Montgomery Ave between Fort Washington Ave and Summit Ave to improve safety due to cut-through commuter traffic.

UDPD Reported 3

Traffic calming on Summit Avenue critical to mitigate vehicle speeds from cut-through commuter traffic exiting the SEPTA Regional Rail parking lot and headed for Bethlehem Pike.

UDPD Reported 2

LEGEND

- Existing Sidewalk
- Existing On-Street Parking Restriction (No Parking or Time Restriction)



TRAFFIC CALMING & SAFETY ANALYSIS for Upper Dublin Township Fort Washington Ave & Summit Ave

FIGURE 1 - Overview of Existing Conditions and Public Comments



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June 2017



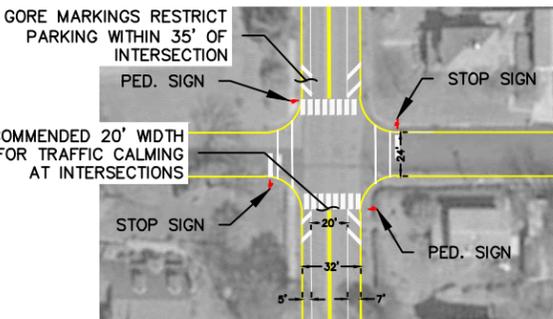
Fort Washington Avenue - Traffic Calming Phase 1 - Pavement Markings & Signage

PAVEMENT MARKING FOR "35 MPH"



- INTERSECTION OF FORT WASHINGTON & PROSPECT
- ADD CONTINENTAL CROSSWALKS ON FORT WASHINGTON
 - ADD STANDARD CROSSWALKS ON PROSPECT
 - ADD ACTIVATED FLASHING PEDESTRIAN CROSSING SIGN AND SPEED RADAR SIGN (FOR BOTH DIRECTIONS) ON FORT WASHINGTON

UPDATE PAVEMENT MARKINGS ON FULL LENGTH OF FORT WASHINGTON WITH A 5' SOUTHBOUND SHOULDER, 10' SOUTHBOUND TRAVEL LANE, 10' NORTHBOUND TRAVEL LANE, AND 7' PARKING LANE. INCLUDE PAVEMENT MARKINGS THAT DELINEATE PARKING RESTRICTED AREA WITHIN 35 FEET OF INTERSECTIONS TO IMPROVE SIGHT LINES FOR CROSSING FORT WASHINGTON.



- INTERSECTION OF FORT WASHINGTON & SPRING
- ADD CONTINENTAL CROSSWALKS ON FORT WASHINGTON
 - ADD STANDARD CROSSWALKS ON SPRING
 - ADD "PED CROSSING" SIGNS ON FORT WASHINGTON
 - ADD ADDITIONAL STOP SIGNS ON SPRING
 - ADD DOUBLE YELLOW ON SPRING FOR 100' ON SPRING



- INTERSECTION OF FORT WASHINGTON & MONTGOMERY
- ADD CONTINENTAL CROSSWALKS ON FORT WASHINGTON
 - ADD STANDARD CROSSWALKS ON MONTGOMERY
 - ADD ACTIVATED FLASHING PEDESTRIAN CROSSING SIGN AND SPEED RADAR SIGN (FOR BOTH DIRECTIONS) ON FORT WASHINGTON

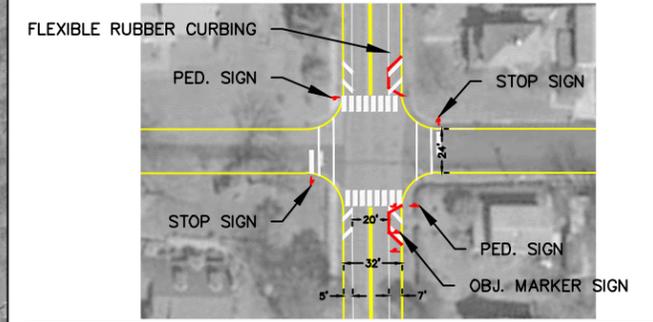
ESTIMATE OF PROBABLE COST				
ITEM	LEGEND/ QUANTITY	UNITS	PRICE PER UNIT	PRICE (TOTAL)
SPEED RADAR SIGN, PEDESTRIAN ACTIVATED FLASHING CROSSING SIGN, 14" PEDESTAL POLE	4	EACH	\$11500	\$46000
CONTINENTAL CROSSWALK (ASSUME 80 LF PER CROSSWALK)	480	LINEAR FEET	\$8	\$2560
STANDARD CROSSWALK (ASSUME 50 LF PER CROSSWALK)	300	LINEAR FEET	\$5	\$500
PAVEMENT MARKING REMOVAL	9000	LF	\$0.5	\$4500
PAVEMENT MARKINGS - YELLOW	9400	LF	\$1.75	\$16450
PAVEMENT MARKINGS - WHITE	9000	LF	\$1.75	\$15750
PAVEMENT MARKINGS - PARKING RESTRICTION (24" STRIPING)	200	LF	\$8	\$2448
PAVEMENT MARKINGS - "35 MPH"	35 4	EACH	\$350	\$1400
"PED. CROSSING" SIGN (24"x24") WITH "ARROW" PLAQUE (24"x12") (ASSUME \$40/SF)	2	EACH	\$160	\$320
"STOP" SIGN (30"x30")	2	EACH	\$250	\$500
			Sub-Total	\$90428
			Say	\$91000

ALL PROPOSED TRAFFIC CALMING MEASURES ARE SUBJECT TO PENNDOT APPROVAL



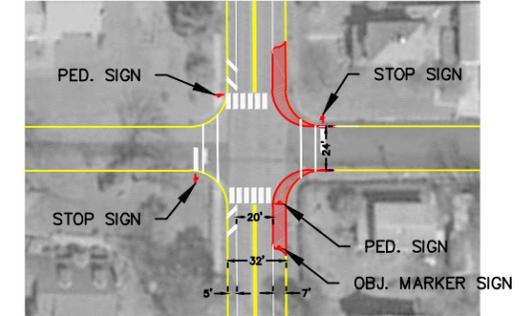
Phase 2 - Flexible Bump Outs

NOTE: SEMI-PERMANENT BUMP-OUTS COMPOSED OF FLEXIBLE RUBBER CURBING (18 PIECES NEEDED PER INTERSECTION). EACH PIECE OF FLEXIBLE RUBBER CURBING IS 3.25' IN LENGTH.



ESTIMATE OF PROBABLE COST				
ITEM	LEGEND/ QUANTITY	UNITS	PRICE PER UNIT	PRICE (TOTAL)
FLEXIBLE CURBING	54	EACH	\$65	\$3510
OBJECT MARKER SIGN (12"x36")	3	EACH	\$120	\$360
			Sub-Total	\$3870
			Say	\$4000

Phase 2 Alternate - Permanent Bump Outs



ESTIMATE OF PROBABLE COST				
ITEM	LEGEND/ QUANTITY	UNITS	PRICE PER UNIT	PRICE (TOTAL)
CONCRETE CURBING (140 LF PER INTERSECTION)	420	LINEAR FEET	\$60	\$25200
EXCAVATION & TOPSOIL (24 CY PER INTERSECTION)	72	CUBIC YARD	\$110	\$7920
OBJECT MARKER SIGN (12"x36")	3	EACH	\$120	\$360
ADA RAMP (8 PER INT.)	24	EACH	\$4500	\$108000
			Sub-Total	\$141480
			Say	\$142000

TRAFFIC CALMING & SAFETY ANALYSIS for Upper Dublin Township Fort Washington Ave & Summit Ave

FIGURE 2 - Fort Washington Concepts
Phase 1 and Phase 2



Summit Avenue - Traffic Calming Phase 1 - Pavement Marking & Signage

SIGN FOR "ENTERING RESIDENTIAL NEIGHBORHOOD"



PAVEMENT MARKING FOR "25 MPH"



INTERSECTION OF SUMMIT & PROSPECT
 - EXISTING CONTINENTAL CROSSWALKS ON PROSPECT
 - ADD CONTINENTAL CROSSWALKS ON SUMMIT
 - ADD ACTIVATED FLASHING PEDESTRIAN CROSSING SIGN AND SPEED RADAR SIGN (FOR BOTH DIRECTIONS) ON SUMMIT

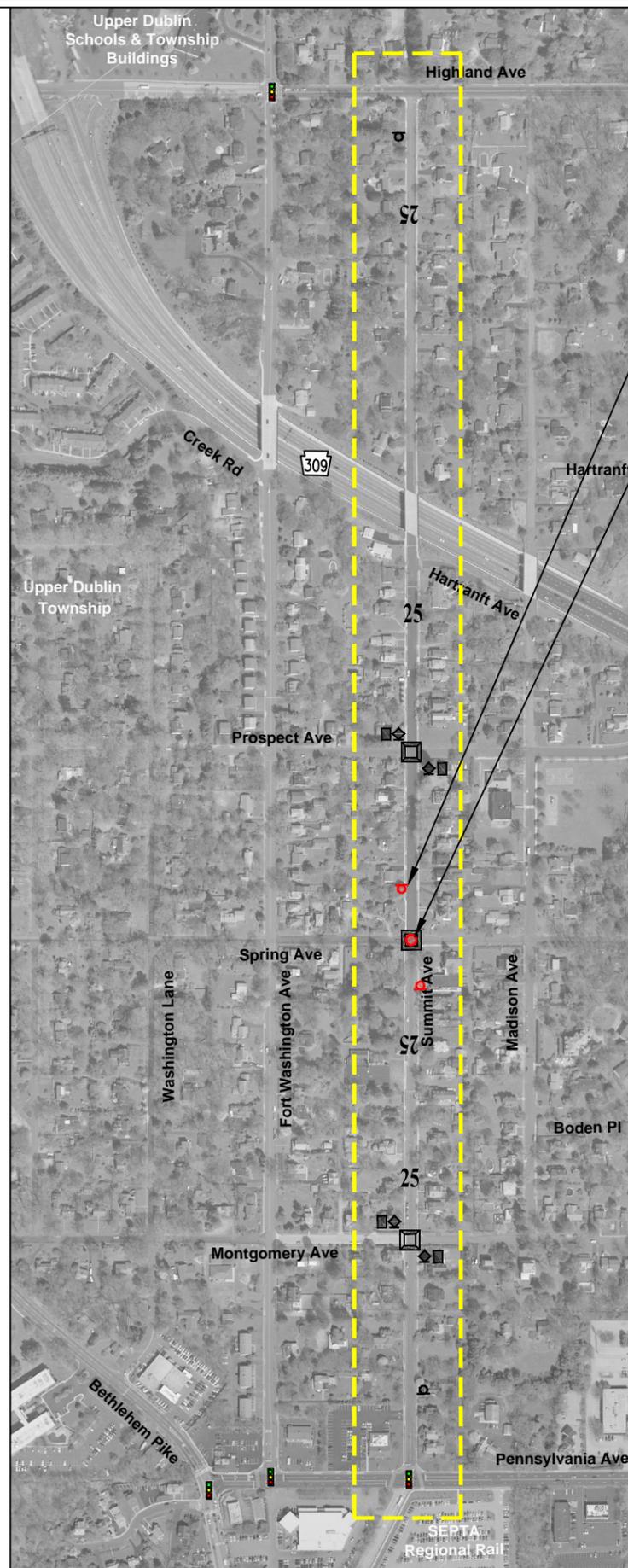
NOTE: AT ALL INTERSECTIONS, VERIFY LOCATION OF ALL EXISTING "NO PARKING HERE TO CORNER" SIGNS TO ENSURE ADEQUATE SIGHT DISTANCES. RELOCATE SIGNS AS NECESSARY.

INTERSECTION OF SUMMIT & SPRING
 - EXISTING CONTINENTAL CROSSWALKS ON ALL APPROACHES

INTERSECTION OF SUMMIT & MONTGOMERY
 - NO EXISTING CROSSWALKS
 - ADD CONTINENTAL CROSSWALKS ON SUMMIT
 - ADD STANDARD CROSSWALKS ON MONTGOMERY
 - ADD ACTIVATED FLASHING PEDESTRIAN CROSSING SIGN AND SPEED RADAR SIGN (FOR BOTH DIRECTIONS) ON SUMMIT

ESTIMATE OF PROBABLE COST

ITEM	LEGEND/ QUANTITY	UNITS	PRICE PER UNIT	PRICE (TOTAL)
"RESIDENTIAL STREET" SIGN (24"x24" AT \$40/SF)	2	EACH	\$160	\$320
SPEED RADAR SIGN, PEDESTRIAN ACTIVATED FLASHING CROSSING SIGN, 14' PEDESTAL POLE	4	EACH	\$11500	\$46000
PAVEMENT MARKINGS - CONTINENTAL CROSSWALK (ASSUME 80 LINEAR FEET OF 24" WHITE STRIPING PER CROSSWALK AND 4 NEEDED)	320	LINEAR FEET	\$8	\$2560
PAVEMENT MARKINGS - STANDARD CROSSWALK (ASSUME 50 LINEAR FEET OF 6" WHITE STRIPING PER CROSSWALK AND 2 NEEDED)	100	LINEAR FEET	\$5	\$500
PAVEMENT MARKINGS - "25 MPH"	4	EACH	\$350	\$1400
RESET "NO PARKING HERE TO CORNER" SIGNS (AS NECESSARY)	6	EACH	\$125	\$750
			Sub-Total	\$51530
			Say	\$52000



Summit Avenue - Traffic Calming Phase 2 - Mini-Roundabout



ADVANCE WARNING SIGNS FOR "ROUNDABOUT AHEAD" WITH "10 MPH" SPEED ADVISORY PLAQUE

SEMI-PERMANENT MINI-ROUNDABOUTS COMPOSED OF FLEXIBLE RUBBER CURBING WITH 24' DIAMETER AND (OPTIONAL) FILLED WITH ASPHALT OR PAVERS

EACH PIECE OF FLEXIBLE RUBBER CURBING IS 3.25' IN LENGTH. A 24' DIAMETER MINI-ROUNDABOUT (75.5' IN CIRCUMFERENCE) REQUIRES 23 TO 24 PIECES OF FLEXIBLE RUBBER CURBING.



ESTIMATE OF PROBABLE COST

ITEM	LEGEND/ QUANTITY	UNITS	PRICE PER UNIT	PRICE (TOTAL)
24' MINI-ROUNDABOUT (FLEXIBLE CURBING ONLY, NO FILL MATERIAL)	1	EACH	\$1560	\$1560
ASPHALT OR PAVER FILL (OPTIONAL)	--	--	APPROX. \$1500	--
"ROUNDABOUT AHEAD" SIGN (30"x30") WITH "10 MPH" SIGN (18"x18")	2	EACH	\$340	\$680
SIGNS FOR EACH APPROACH - OBJECT MARKER (18"x18"), KEEP RIGHT (18"x30"), YIELD (36"x36")	4	EACH	\$600	\$2400
			Sub-Total	\$4640
			Say	\$5000

ESTIMATE OF PROBABLE COST FOR ALL PHASES

PHASE 1	\$52000
PHASE 2	\$5000
TOTAL	\$57000

TRAFFIC CALMING & SAFETY ANALYSIS for Upper Dublin Township Fort Washington Ave & Summit Ave

FIGURE 3 - Summit Avenue Concepts
Phase 1 and Phase 2

