



June 10, 2008

Board of Commissioners
Upper Dublin Township
801 Loch Alsh Avenue
Fort Washington, PA 19034

RE: Proposed Fire House at Bonsell Tract

Dear Members of the Board:

Orth-Rodgers examined the Bonsell Tract as a location for a new Fire House with regard to the safety of the adjacent school zones and prepared a letter dated October 30, 2007. We have now performed an additional review as a result of questions and comments made at the May 13 Commissioners meeting. This letter summarizes our review.

Our conclusion remains that:

1. The location of a fire house at the Bonsell Tract poses no safety risk to students attending the Fort Washington Elementary School or Upper Dublin High School
2. The effect of the adjacent school zones on delays to fire emergency vehicles is minor.

Recommendations:

Provide school crossing guards with a beeper that notifies them that there is a call at the fire station, so that they are prepared.

Provide a school crossing guard with traffic control authority at the school crossings at the new High School Driveway/Hawthorne Lane and at Loch Alsh Avenue.

Safety

We performed an extensive search of for information that would show an increased safety risk as a result of locating a fire house near a school zone. This included broadcast email to professional organization list-serves. Since safety is the primary concern, if there was any information or opinion of experts that indicated there is a risk, we wanted to find it.

A program analyst at the US Department of Transportation, National Highway Traffic Safety Administration, National Center for Statistics and Analysis responded to my inquiry on crash statistics in a school zone. She searched the national database. Her email, attached to this letter, states:

“...I searched ten years of FARS and GES data for emergency vehicles involved in crashes in school zone signed areas. I only came across **two incidences over the entire ten year period**. One was a fatal crash involving a police vehicle, which was not in emergency use at the time of the crash and the other was a property-damage-only crash involving a police vehicle, which **was also not in emergency use at the time of the crash.**”

This is very compelling evidence that a school zone would not be at risk from a fire station.

All other respondents also indicated no evidence of safety risk. In fact, the Broward County (Florida) School Board Safety Director (Broward County is the sixth largest school district in the country) indicated in his email reasons why he would support a fire station in a school zone. In an email attached to this letter, he writes:

1. “The fire equipment that operates from the fire station is operated by highly trained professionals, where safety is their primary emphasis on all phases of their operation.
2. Fire Stations are marked as Safe Zones where children can go to in an emergency.
3. I advised that I would prefer a fire station on the site instead of a gas station or a convenience store or other type of occupancy where there is no control of the type of traffic it generates.

4. The location of the fire station would provide a better response time to our school in the event of an emergency.
5. Last but not least, I agree with the statement from Linda Laskin (of *Broward County Traffic Engineering, another email response we received*) we do have fire stations next to our school sites in many locations and they have been very good neighbors and I am not aware of any incidents."

Orth-Rodgers & Associates staff includes P. Norman Deitch, formerly Chief of Traffic Engineering and Safety at New Jersey Department of Transportation, and Bruce Littleton, formerly Chief Traffic Engineer of Delaware Department of Transportation. Both stated that there is not a safety concern with locating a fire house in a school zone, and I concur based on my research.

Effect of Schools on Delay

Vehicles are required to pull over to the side of the road when an emergency vehicle is approaching. This applies at all times including during school arrival and departure hours and during events. When the school speed flashers are operating, there would be added travel time to the station for responders arriving from the south of up to 70 seconds. Emergency vehicles travelling through the school speed zone are allowed to exceed the speed limit with caution.

Fire vehicles respond through the school zone now; compared with the current Summit Avenue location, the number of calls through the school zone during reduced speed limit times would increase from once a week to twice a week with the Bonsell site location.

Physical Conditions

The relevant physical dimensions with respect to the fire house are the length of the school speed zone on Fort Washington Avenue and the width of Fort Washington Avenue.

School Speed Zone

The school zone for Upper Dublin High School extends from north of the Professional Center Driveway (frontage of the Bonsell tract) to south of Loch Alsh Drive. The school zone for Fort Washington Elementary School extends from south of Thomas Drive (just north of the 'Van Sant driveway') to just south of Highland Avenue. Technically they are two separate school zones. However, they operate on the same hours and the school crossing with guard at Thomas Drive effectively makes it operate as one zone. The total length is about 2,700 feet. The difference in driving time at 35 mph and at 15 mph is 70 seconds.

Width of Fort Washington Avenue

The basic width of Fort Washington Avenue is 32 feet, but some sections are wider. North of the Bonsell Tract to Susquehanna Road the width is 32 feet. From the northern end of the High School zone to Hawthorne Lane the road widens by 4 feet on the Bonsell tract side, for a width of 36 feet. Between Hawthorne Lane and 100 feet north of Loch Alsh Avenue the width of Fort Washington Avenue is 38 feet. At Loch Alsh Avenue the roadway is 32 feet. The roadway again widens by four feet on the non-school side for approximately 200 feet north and south of Thomas Drive, making the road width 36 feet in this area. The road is 32 feet wide from that point through the Elementary School frontage and south of Highland Avenue.

The width of the southbound lane is relatively consistent at 16 feet.

The road width of 32 feet is sufficient for passage of an emergency vehicle when traffic is pulled over on both sides of the roadway. A fire truck width is 8 ½ feet. Other trucks can be as wide as 8 ½ feet. Vans, pickups and SUVs are less than 7 feet wide and most cars about 6 feet wide.

The width available to a fire truck with other vehicles pulled over to both sides of the road will usually be 16 feet. The fire truck will be travelling over the painted center line. This is not unusual for emergency vehicle operation.

Observation at Fort Washington Elementary School

Residents at the May 13 Commissioners meeting commented that we had analyzed the High School traffic but not the Elementary School. We then went out to observe the Fort Washington Elementary School on Tuesday May 20 at dismissal and Wednesday May 21 at arrival and dismissal. Tuesday had heavy rain and had much more parent pickup traffic than the following day, which was sunny.

Classes start at 8:50 am and are dismissed at 3:30pm.

In the morning, early parent dropoff for 8:00 am band practice occurs from 7:45 – 8:00 am. Buses activity starts at 8:20 am and continues to 8:50 am; there 4 full size buses and 13 smaller buses or vans. Walkers and bicyclists start to arrive at 8:30 am. Parent dropoff for regular class day starts at 8:15 am. At 8:25 parent dropoffs start to use the side entrance, circulating around the parking lot. Dropoff activity peaks between 8:35 and 8:45 am. At this time some parents drop off on the Highland Avenue frontage of the school. Occasionally parents drop students off on Fort Washington Avenue south of Highland Avenue.

At times up to 3 -4 vehicles would be stopped in either direction on Fort Washington Avenue waiting to turn left or right into the school driveway. Vehicles that were not going to the school could get around those stopped vehicles.

For student pick-up in the afternoon, parents are directed to the parking lot loop to the side door pickup area, and only buses use the front loop. Buses can still enter when parent vehicles are queued. Parent vehicles typically start to arrive at 3:00pm. On the rainy day, parents started to arrive at 2:50 pm. The queue of parents entering the parking lot extended back to the street at 3:18 pm at which time no more parents could enter since school was not yet dismissed. Driveway entry started moving at 3:35 PM. Parent traffic turning right into the school backed up along Fort Washington as far back as the second crosswalk in front of Thomas Drive. By 3:45 pm this queuing cleared out. Non-school traffic on Fort Washington Avenue went around the stopped vehicles. Parents also wait along on the Highland Avenue frontage to pick up. On nice days, some parents park on Thomas Drive and walk to the school to pick up their child.

While there are certainly times of congestion at the Elementary School, the relevant fact is that emergency traffic will be able to get by when motorists pull over to the curb.

Upper Dublin High School

Traffic congestion at the high school today is caused by a combination of inadequate queue storage on the Loch Alsh loop drive for parent vehicles dropping off students, and two crossing guard-controlled pedestrian crossings of Loch Alsh that stop traffic. The backups on Loch Alsh extend both northbound and southbound on Fort Washington Avenue. When traffic cannot turn into Loch Alsh Avenue, Fort Washington Avenue backs up since Fort Washington has a single lane in each direction. This is a morning problem only; afternoon traffic does not have the same kind of peak due to after school activities.

I reviewed the new High School plans and traffic information during the High School approval process. The backups on Fort Washington will disappear since

- About 20% of school entering traffic will use the new Spark Drive entrance on Susquehanna Road and so is removed from Fort Washington Avenue
- The drop off loop on Loch Alsh Avenue that is the source of the backup will be removed, and
- The parent drop off traffic is dispersed to three different drop off areas at the school farther from Fort Washington Avenue, and the parent vehicle queue storage is more than quadrupled.

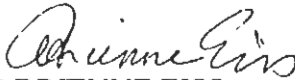
Orth-Rodgers has performed an extensive review of this location, including

- Reviewed plans and traffic study for new High School
- Viewed and measured roadways
- Observed traffic controls, signing, and pavement markings in place
- Reviewed PennDOT permits for signal at Fort Washington Ave. and Highland Ave. and for the School Speed Limit Flashing Signs
- Performed field views of traffic conditions during High School AM arrival
- Performed field views of traffic conditions during Fort Washington Elementary School during AM arrival and PM departure
- Contacted fire chief/school official at two local examples of fire houses near schools
- Reviewed PA Vehicle Code for vehicle dimensions and operating rules
- Researched school safety and fire safety web sources, inquired on professional society list-serve
- Consulted National Highway Safety Administration for statistics on emergency vehicle accidents in school zones

SUMMARY

Our further investigation into the Bonsell Tract as a location for a new fire house concludes that there is no negative impact on school safety. We also believe the site is suitable from a traffic perspective.

Very truly yours,
ORTH-RODGERS & ASSOCIATES, INC.


ADRIENNE EISS
Senior Project Manager

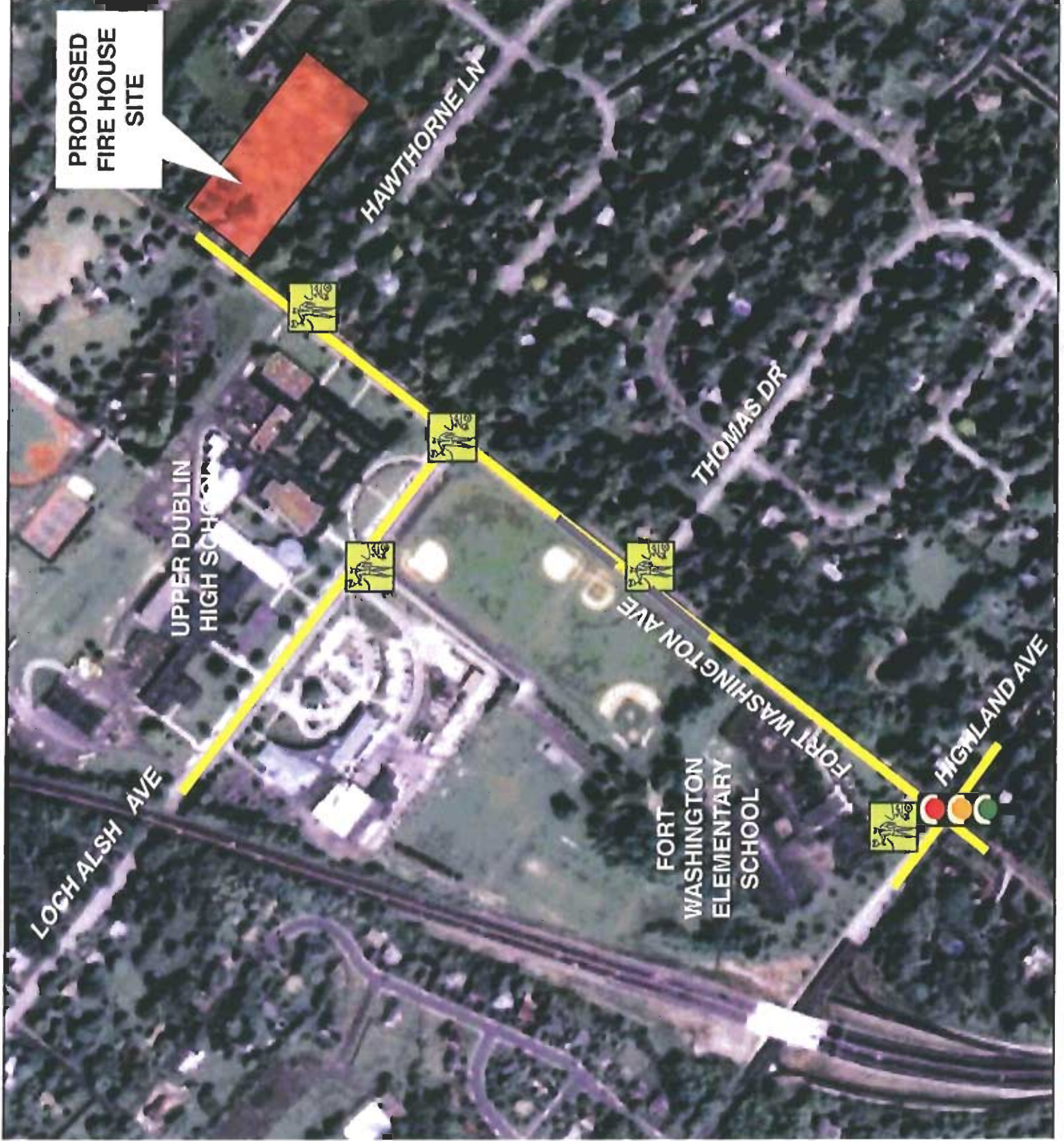
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LEGEND

SCHOOL
SPEED ZONE

SCHOOL
CROSSING
GUARD

TRAFFIC
SIGNAL



PROPOSED
FIRE HOUSE
SITE

HAWTHORNE LN

THOMAS DR

UPPER DUBLIN
HIGH SCHOOL

FORT WASHINGTON AVE

HIGHLAND AVE

LOCH ALSH AVE

FORT
WASHINGTON
ELEMENTARY
SCHOOL

Southbound Fort Washington Avenue

