

Exclusive vs. Concurrent Pedestrian Phase Crossing

By DPW Engineering Division



The purpose of this presentation is to obtain approval by the Board of Selectman acting in their power as the Legal Traffic Authority to approve the conversion of 10 signalized intersections from Exclusive Pedestrian Phase to Concurrent Pedestrian Phase.

First it is important to understand that the DPW - Engineering Division handles several requests a year related to traffic flow.

The three main requests are:

- "Lower my Travel Time" or "It takes forever to get from A to B"
- "Make Traveling Safer"
- "Slow Down Traffic on our Neighborhood Road"

The goal of this presentations is to describe the differences between an Exclusive Pedestrian Phase and a Concurrent Pedestrian Phase. Implementing the Exclusive Pedestrian Phase will assist with decreasing traffic congestion which will address the first request of lower travel times.

Intersections



- Lights are in a pre-set time cycle that repeats
- For example, at a four way intersection, time will be given to:
 - east-west driving phase,
 - north-south driving phase,
 - and a pedestrian phase



In Greenwich, there are three types of intersections.

Un-controlled intersections which are intersections with no signal or signage in any direction.

Sign-controlled intersections are locations that have either stop signs or yield signs in at least one direction.

Signalized intersections are ones that have a traffic signal controlling the intersection.

Nearly all traffic signals have pre-set timings. These timings are a way to distribute the cycle time to different directions depending on the flow of traffic. Periodic studies are done to verify the timing plan is still accurate and minor adjustments can be made to the signals to make the intersection more efficient. There may be different phasing plans throughout the day depending on the traffic demands.

Pedestrian Signals



At nearly all Town traffic signals we have Pedestrian crossing signal heads. These are the ones with the “White Walking Man” and the “Red Stop Hand”.

Currently in Greenwich, all traffic signals operate in an Exclusive Pedestrian Phase.

Exclusive Pedestrian Phase

- Existing Standard in Greenwich
- Vehicles - Red when Pedestrians – White
- Requires button to be activate
- NO TURN ON RED signs Recommended
- Recommended for heavy pedestrian areas

What is “Exclusive Pedestrian Phase” ?

Very simply, Exclusive Pedestrian Phase provides a separate phase of the traffic signal where all vehicle lights turn to red and the “white walking man” comes on allowing pedestrians to cross the street without vehicle traffic movement.

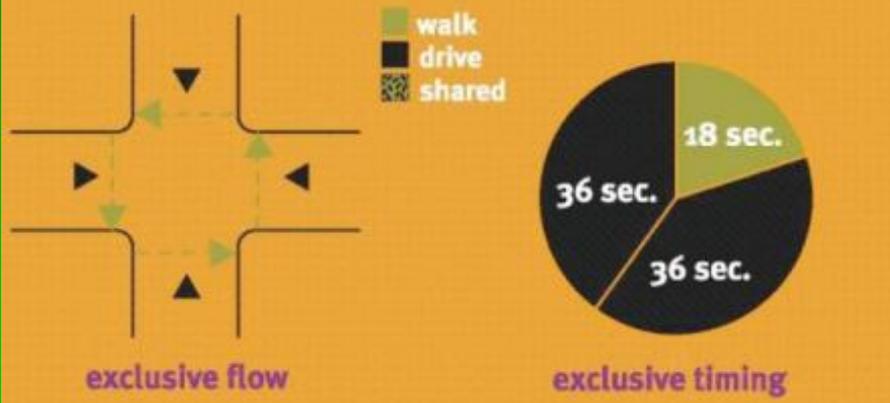
This phase requires that the pedestrian push a button and wait to cross until the next phase of the signals.

For proper operations, a No Turn on Red sign is highly recommended.

This phasing is typically recommended only for areas of heavy pedestrian volume due to the negative impacts on the efficiency of the traffic signal.

Exclusive Pedestrian Phase

Exclusive signals—cars and peds move separately



This graphic illustrates that when a signal has an exclusive pedestrian phase, a portion of the cycle time is allotted to pedestrians to walk across the intersection.

In the event that a pedestrian does not utilize this allotted time, it is lost time, it does not get spread across the other phases. Therefore, in this example, every 36 the light will turn red, causing traffic to stop in that direction.

Exclusive Pedestrian Phase



Pros

- No Vehicle - Pedestrians conflict
- Pedestrians cross all directions

Cons

- Pedestrians must wait longer
- Violate Red Hand
- Decreases the level of service

The Pros of the Exclusive phase include:

- The pedestrians are able to cross without the concern for vehicles conflicting. This is only true if No Turn on Red signs are in place.

- Pedestrians are allowed to cross in all directions at the same time. Although the signal timing is not designed this way, many people will cross diagonally through the intersection to avoid having to cross two roads.

The Cons of the Exclusive phase include:

- Pedestrian must wait longer before their phase of the signal gives them permission to walk. This can result in pedestrian frustration.

- Often people push the walk button but do not wait for the "Walking Man" to appear before crossing; this results in traffic having to wait at an all-red light when pedestrians have already crossed which results in frustrated drivers.

- Decreases the level of service of an intersection because of shortened phase lengths which increase vehicle wait times, raises travel times and increases congestion and emissions.

Per the Federal Highway Administration, there are no known studies that show that implementing Exclusive Pedestrian Phasing actually improves public safety.

Concurrent Pedestrian Phase

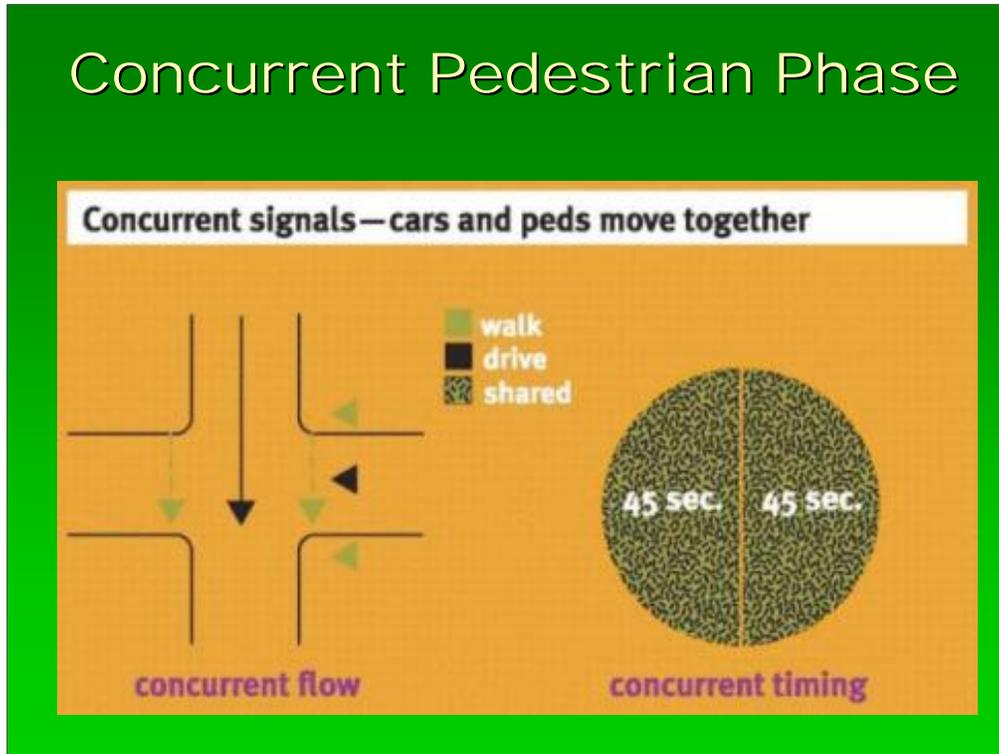
- Walking Man same time as Green Light
- Vehicles and Pedestrian cross together
- Standard in most areas
 - Manhattan
 - Stamford
 - White Plains
 - Port Chester

Concurrent Pedestrian Phase is the method of providing the walking man at the same time as the green light in the same direction.

This allows the pedestrians to cross the same time as traffic traveling in the same direction.

This phase is the standard in most municipalities throughout the United States including the heavy pedestrian areas of Manhattan and most of our neighboring communities.

Concurrent Pedestrian Phase



During this signal phasing, the pedestrians and the vehicles share the amount of time allotted to travel in their respective directions. This provides longer uninterrupted periods of times for vehicles and pedestrians.

Vehicles are still required to yield to pedestrians within the crosswalk if they are turning. This phasing will help to reduce congestion and decrease travel times.

Concurrent Pedestrian Phase



Pros

- Increases the level of service
- Decreases pedestrian wait times
- More efficient signal operation

Cons

- Turning Vehicles must wait for pedestrians
- Turning vehicle pedestrian conflicts

The benefits of the concurrent pedestrian signal include:

- Increasing the level of service of the intersection both in relation to vehicle and pedestrians.
- Decreases the time pedestrians are required to wait for the next signal phase.
- Creates a much more efficient signal operations by increasing green time, reducing the number of cycles which reduces congestion.

The Cons of the concurrent phase are:

- Turning vehicles must yield the right of way to pedestrians crossing the intersection and wait momentarily while the pedestrians clear their travel path.
- There is a higher number of potential vehicle pedestrian conflicts in this configuration. However, as stated before, Federal Highway Administration has no studies showing pedestrian safety has decreased.

Signal Modification Locations

- Route 1 & Western Junior Highway
- Route 1 & East Weaver and Holly Hill Lane
- Route 1 & Valley Dr.
- Route 1 & Harold Ave.
- Route 1 & Taylor Drive/Cross St.
- Route 1 & Strickland Road
- Route 1 & Sinoway Road
- Route 1 & Orchard St /Mead Ave.
- Mill St. & N.Water St. /S. Water St.
- Mill St. & Delavan Ave./Mead Ave.

The following intersections will be the first intersections to be implemented.

Route 1 & Western Junior Highway

Route 1 & East Weaver and Holly Hill Lane

Route 1 & Valley Dr.

Route 1 & Harold Ave.

Route 1 & Taylor Drive/Cross St.

Route 1 & Strickland Road

Route 1 & Sinoway Road

Route 1 & Orchard St /Mead Ave.

Mill St. & N.Water St. /S. Water St.

Mill St. & Delavan Ave./Mead Ave.

Once approval is received today, we will proceed with revising the technical specifications for the signal plans and submitting the plans to the State Traffic Authority for approval. Once approval is received, we will make the necessary field modifications to these signals. We anticipate this process to take approximately 3-6 months.

Temporary signage will be placed at these intersections to indicate a change has occurred and public outreach will be conducted via the media, the Town website, the schools and other various agencies.

Questions?



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