

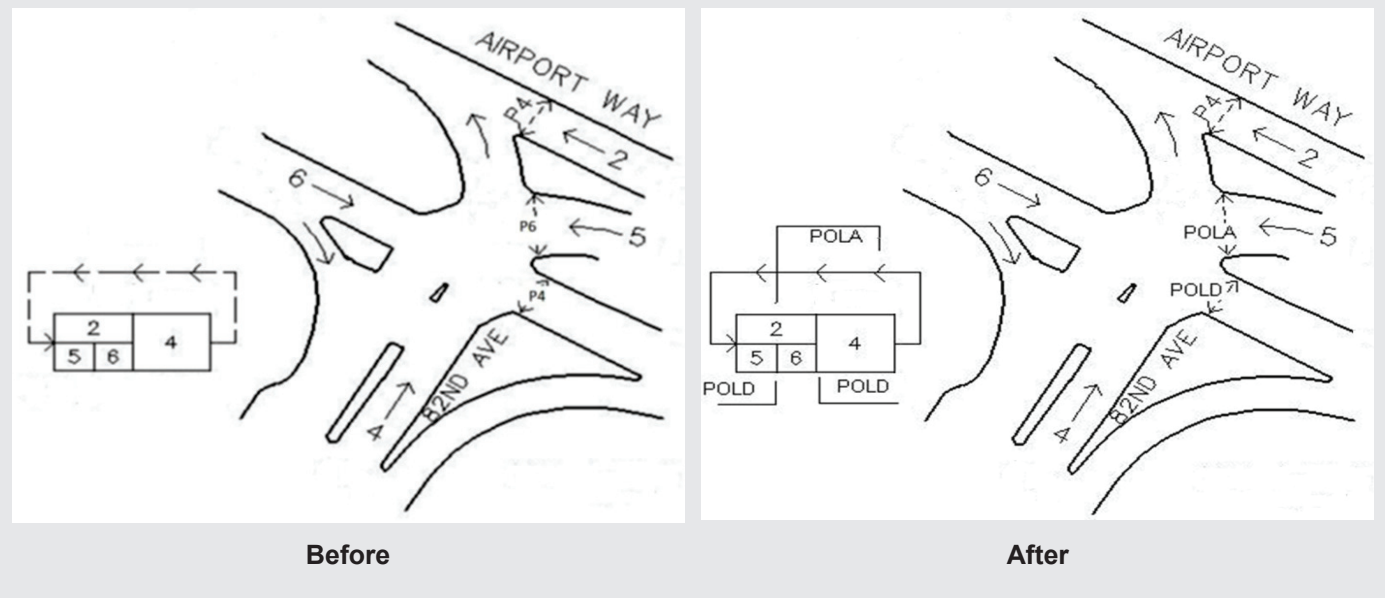


## IN MY PRACTICE...

by Peter Koonce

The standard ring barrier configuration has been helpful to standardize design, operations, and maintenance functions of signalized intersections. Yet, there are some cases where the strength of the ring barrier diagram may limit our willingness to think outside the box. The intersection of NE 82nd & Airport Way in Portland, Oregon is a heavily travelled intersection with light rail in close proximity. Medians separating the movements provided an opportunity to allow pedestrians to cross in three stages during non-conflicting vehicle phases. This was done to insure safe operation of the light rail preemption.

The sketch of the intersection on the left shows the vehicle phases numbered 2, 4, 5, and 6. The pedestrian phases, numbered P4 and P6, operate at the same time as the vehicle phases 4 and 6, respectively. A pedestrian crossing Airport Way would be served by three sequential pedestrian phases: P4, P6, and P4. The sketch on the right shows a design that used overlaps to cross the barriers for pedestrians allowing the signal timing to permit crossings over the entire length of a cycle, reducing the pedestrian crossing time by up to 75 seconds. It also improved crossings for people on bicycles, addressing a complaint from a cyclist who correctly noted that the ring barrier structure prioritized vehicle movements with little concern for efficient pedestrian operations. A simple modification to the allowable phases and the order of the movements allowed a person on a bicycle to cross on the pedestrian movement more efficiently by assigning multiple phases to the various overlaps at the intersection.



**CONCEPT MAP**

*Terms and variables that should appear in your map are listed below.*

concurrency group  
movement

NEMA phase numbering  
overlap

phase  
ring

ring barrier diagram

