

**KENT COUNTY COUNCIL SECTION 118A – HIGHWAYS ACT 1980
PUBLIC FOOTPATH CW80 & CWX40, WHITSTABLE
GLEBE WAY LEVEL CROSSING
RAIL CROSSING EXTINGUISHMENT ORDER 2018
PINS REFERENCE: ROW/3226477**

**NR NOTE ON RATE OF ACCELERATION OF 375 CLASS TRAINS TOWARDS
THE GLEBE LEVEL CROSSING IN THE UP DIRECTION/ON THE UP LINE**

1. The Inspector is invited to note that this Note replaces the note **NR9: Note on Train Acceleration on Up Line (375 & 395 Class trains)** [1 page] which incorrectly assessed trains passing the Speed Change board at the front end, rather than the rear of the train, erroneously giving an acceleration distance of 106m. Apologies are extended for this calculation error.
2. The following calculation relates to 375 class of rolling stock fleet calculated on both a 2-car and 3-car formation, both being standard formation of length that travels over the Crossing. All calculations given below are approximate and relate to the 375 class of rolling stock fleet.
3. **375 Class**
 - a. Maximum acceleration is 0.64 m/s^2 (1.43 mph^2) averaging 375 sub-fleets. The length of a carriage is 20.4m.
 - b. Assuming a 3-car unit with a start speed of 50mph (in Direct Current (Third Rail) mode) and accelerating at 0.64 m/s^2 , the time to travel 45m (the remaining distance between the front of the train and the Crossing, after the rear has passed the Speed Change sign) is 2 seconds, by which time the accelerating train will be travelling at **52.75 mph** at the Crossing.
 - c. Assuming a 2-car unit (which do periodically travel the line) and applying the same methodology of calculation means the train is accelerating at 65m, 3 seconds from the Crossing reaching a final speed of **54mph**.
4. The speeds are provided by the South Eastern Head of Engineering Support Services.
5. Taking the above speeds and an attainable speed of 65mph in the Down direction, there is a significant variation of speeds of approaching trains, such that users of the crossing have to make a judgement call on how fast a train is actually approaching and how long they have to safely traverse the crossing. This can (dangerously) influence users to critically misjudge the time remaining to cross, believing that the train is travelling at a lower, than actual, speed. If the train is travelling at a higher speed than perceived, upon electing to cross, a user may have insufficient time to reach a point of safety.