



RAIL & COMMUTER TRANSPORT PLAN FOR EAST WICKLOW

January 2018 version 4



CLLR. DEREK MITCHELL (FG) BAI, FCA

Summary

The long term Irish Rail and NTA Plan is to provide a worse service south of Bray using a shuttle train. Although unstated, it is understood that northbound direct diesels will be terminated at Greystones to allow a better DART service in Co. Dublin. A shuttle has been a failure previously, best illustrated by the photo of the 1992 Anti Shuttle march (p2). The reasons it will fail again are detailed later.

The Plan will mean more people will use the road. The N11 is heavily congested around Bray and it will be at least 10 years before improvements are implemented. Even then the N11 around Bray will always be a choke point. The population is expanding as required by the Department of Environment population target instructions.

This alternative plan document provides for a tripling of rush hour rail capacity and an express bus service on the N11 with Park n' Ride, at a limited cost. In no other area are Co. Dublin trains crowding out the further out ones. Wicklow must not be downgraded and space can and must be found for Wicklow diesels. The rail line is expensive to maintain; it should be used far more.

Short Term. Lengthen the two Wicklow rush hour diesels from 4 to 8 carriages. ADD a third rush hour diesel from Wicklow at 07.21(ex Greystones) or possibly a DART. Eight carriage diesels will need to be split at Wicklow Town going South, a siding created and platforms lengthened there and Kilcoole. Having checked each station to Gorey a number of alternatives to train splitting are detailed later but need more technical investigation. It also requires rearranging tracks at Bray to reduce single track contention time by 15% to improve timekeeping, and to purchase some DART or diesel carriages.

Longer Term. Providing a 20 min DART service to Greystones (50% more DARTs than now) and a shuttle South of there in **addition** to rush hour direct diesels. This requires double tracking from Bray Head Tunnel exit to Greystones, re-signalling section, passing loop at Newcastle, extra carriages, rearranging Greystones tracks, lengthening platforms South of Wicklow and probably selective door opening carriages.

Express buses. On the N11 with Park n' Ride sites, CCTV, in about 5 locations. Copying the successful 84x service they should skip Bray Main Street and take the N11/M50. Some, at rush hour at least, should go on the M50 to Cherrywood & Sandymount junctions and LUAS at Red Cow where many Wicklow people work.

Costs. This Plan is a low-cost way of getting commuters off the road. A much lower cost than putting DART to Wicklow or a new tunnel in Bray Head, both of which have Environmental issues. Most of the short-term cost is purchasing carriages which, being imported, would not add to national inflationary pressures in the same way as spending within Ireland.

Studies. A Wicklow voice is needed on any studies as all technical studies so far give priority to Co. Dublin at the expense of Wicklow.

THE IRISH TIME

PRICE 75p (incl. VAT) 65p sterling area

DUBLIN, THURSDAY, MARCH 12, 1992



The Greystones Transport Action Group and town residents on their protest march yesterday from Pearse Street station to the Department of Tourism and Transport in Kildare Street where they handed in a petition requesting an extension of the DART line from Bray to Greystones. A spokesman said the journey from Greystones to Dublin city centre took 26 minutes longer now than in 1955. Photograph: Eric Lake.

March 11, 1992 march protesting at shuttle service and demanding the extension of the DART to Greystones



Crowds wait for 08.00 DART at Greystones Station

Irish Rail and National Transport Authority Plans.

In 2018 Irish Rail is to introduce a 10-minute DART service in Co. Dublin. There will be no extra services South of Bray but journey times will be increased by about 5.5 minutes, to 58 minutes from Connolly to Greystones. A 12% increase in journey time. This is part of a continuous increase in journey time. Journey time was 35 minutes in 1955 but more priority has been given to Co. Dublin and at least 6 extra stations were opened there. Another station is planned in Woodbrook, Co. Dublin which will further slow Wicklow trains. Speed is already the slowest on the rail system even before the 2018 slowdown with a Connolly to Bray average speed of 30 kph, Appendix 3.

Longer term.

The 20-year Transport Strategy provides for a good Rail service to Bray; now 4 DARTs per hour, 6 per hour from 2018 and 10 in the medium term. Plus, LUAS to Central Bray in the Long Term. In contrast South of Bray, a worse service is planned. South of Greystones there are now 4 diesel trains a day, 2 at rush hour (06.08 & 07.00 ex Arklow, 4 carriages only) directly to Dublin but skip some stations from Bray. The journey time is long, 98 minutes for the 71km from Arklow. The NTA Strategy provides for Shuttle trains south of Greystones, transferring to the DART there. Although unstated, it is understood, the direct diesel service will stop at Greystones as Irish Rail considers they would interfere with the more frequent Co. Dublin service. This is the only shuttle in the NTA Strategy.

Problems with Strategy

Shuttle will not work

Linking with a 30-minute interval DART service is a major problem when there are delays, as missing it leaves passengers 30 minutes late. In addition, a bus from Greystones to Bray station takes 30 minutes at rush hour as against the 10 minutes by train. Shuttles need to link to a much more frequent service. A shuttle is a much less attractive service than a direct train especially for a long journey as people have to get up, wait and find a new seat on the very busy section from Greystones. Also, Greystones station track layout will need considerable change to provide a good connection without using bridges to walk across. This is not mentioned and is likely to need land acquisition.

At present diesels from Wicklow wait South of Greystones, often 5+ minutes, for the Southbound DART to stop. Presumably to avoid a collision if it overshoots. This means to transfer to a DART will be a long and slow process as the shuttle will have to wait to enter the platform till the DART stops, move forward, stop, passengers get out and transfer, possibly over a bridge. Tracks in Grand Canal Dock are laid out to provide a 'blind' siding so this does not happen there but it is doubtful that could be done in Greystones unless 3 tracks are provided.

Previous Shuttle Experience.

In the 1980's when the DART started, a shuttle was tried and was a failure. Due to unreliability and missed connections usage dropped way off from previous direct train usage. Greystones people were known for being late for work and college. The late Professor Simon Perry of TCD said that students late for exams only had to say they were from Greystones and everyone accepted that as a good reason for being late. This was despite there being a 'blind siding' in Bray, with good transfer connections and more frequent DART's in Bray. A problem was that there were only 2 diesel drivers in the Bray depot and sickness cancelled the shuttle and there were mechanical problems with the trains. When a shuttle was late/cancelled only Greystones people were inconvenienced, whereas when a direct train is late all people up the line are affected. This makes management/T.D. s much more proactive to improve the service.

The photo (courtesy Irish Times) on page 2 shows the Greystones Anti Shuttle march in 1992 where 200 people marched from Pearse Station to the Dáil in protest at the awful shuttle service. By comparison in the same year the 'March for the Unemployed' had only 100 people.

Passing Loops.

It is understood that passing loops are proposed South of Bray Head and Newcastle. Trains, including DARTs, to Greystones are frequently 4 to 7 minutes late, the track, signalling system, suicides around Bray Head and driver changes in Bray causing delays. This means holding a passing train in the loop and delays build up through the day. The author has often sat in Southbound DARTs at Bray waiting for the Greystones train to come in. If a DART to Greystones from Dublin terminates in Bray then Irish rail reliability figures count this as on time, even though the return from Greystones will also not run. This hinders getting management attention to reduce delays. The problem, referred above, of not having more than 1 train moving at a time at a passing loop will also affect timekeeping at these loops.

Other Shuttle use in Ireland.

There are no commuter shuttle services in Ireland. The Manulla junction to Ballina shuttle runs 7 times a day and is used by 65 passengers. It allows 4 minutes for the transfer. Not being a commuter service on busy lines there is much more flexibility to make up time and the service is not as time critical to users. There is a shuttle used from Limerick Junction to Limerick 15 times a day with a 3 to 4-minute transfer. Some trains are direct. This is well outside the Greater Dublin commuter area and the transfer is across 1 platform. Some trains to Dublin take less time than from Arklow to Dublin even though the distance is 2.5 times as much.

Shuttle Summary.

Usage of the shuttle will be low because of the problems identified, some of which did not exist even with the previously failed shuttle. The shuttle only strategy will not work and will result in a modal shift from rail to road, the opposite of what is planned in all other sectors. A different strategy is needed based on retaining and lengthening direct diesels, adding an extra rush hour one, an extra DART from Greystones and increasing the capacity of the critical link Greystones to Bray

section. This will mean providing a slightly worse service than the planned NTA Strategy from Bray North as 3 DARTs will be replaced by 3 diesels.

Two of these diesels exist at present. For overall capacity reasons it is important that the later 2 of the 3 diesels are 8 carriages long.

Interworking DART and diesels.

The central city was re-signalled recently to increase the train paths from 12 to at least 17 an hour to allow better interworking of DART and diesels from Drogheda, Maynooth and Kildare at considerable cost. Only Wicklow is selected for stopping interworking to give Co. Dublin greater service at Wicklow's expense. Seven diesels from Drogheda interwork with DART's during the peak period¹

Current and Future Service issues.

Overcrowded Trains

Presently the 08.00 Greystones DART is the most crowded train in the country with standing room only. The 7.33 Wicklow diesel has standing room only from Wicklow Town. The NTA Strategy, fig 9.6, shows the Greystones to Bray link to be operating at 75-100% capacity in 2035 the highest of any heavy rail link anywhere. This shows a high demand. However, in the authors view, as before, people will not use the shuttle.

Population figures and high commuting load

Greystones, Wicklow, Arklow and Newtownmountkennedy have substantial population growth targets which are handed down from Regional Guidelines and the Department of Environment. A large number of houses for commuters are currently being constructed in Greystones and Newtown.

Data produced for Wicklow County Council by the All Island Research Observatory (AIRO) in Maynooth shows that only 16% work locally in Greystones, probably the lowest in the country. For example, Bray 29%, Wicklow Town 30% and Arklow 37%, which in themselves are still low figures. This indicates a high commuting dependency. The research states that Wicklow commuting is unsustainable and commuting times are about the longest in the state. There are 4237 daily commuters.

Planning policy and Industry.

¹ See Appendix 3. Three Wicklow trains must be allowed through.

NTA policy is to object to job creation at motorway junctions. Certain industries, especially truck based ones, are best there and not town centres. The M50 in Co. Dublin has industry or large shops at every junction, except 1. Many from Wicklow commute to them by road. These jobs should be encouraged in Wicklow, including motorway junctions, to stop people having to commute to Dublin and to encourage 'reverse commuting' as the expensive roads have plenty of capacity in the reverse direction to rush hour.

How to Provide future service

Lengthening direct diesels.

Each train slot in a busy rail system, such as DART, is valuable and should be used to the maximum by having 8 carriage trains. South of Greystones platforms are less than 8 carriages long. Options are:

1. **Lengthen Platforms.** Each station from Greystones to Gorey has been studied², and it should be possible except for Rathdrum. There are options which need to be studied for Rathdrum as detailed.
2. **Selective Door Opening (SDO).** The doors only open on 4 of the 8 carriages and passengers are told to go to front 4 carriages for a short platform station. This is common on other commuter railways but Irish Rail carriages were not ordered with this wiring. The author would have thought that joining 2 sets of 4 carriages would allow wiring to be overridden from the spare cab but was told Irish Rail went to tender to get this done but there were no takers. Unfortunately, the ones about to be purchased will not have SDO either as this is said to need a redesign. The Managing Director of Irish Rail has said that signal and other changes may be needed though the author cannot see why. There may be other lines which need SDO at the outer distances from Dublin. It is important that any future orders have SDO.
3. **Split 8 Carriage Trains.** Run 8 carriage trains to Wicklow and leave 4 carriages there. There appears to be enough space at Wicklow to build a siding for it. It may require an extra staff member to undertake this. Kilcoole and Wicklow platforms need to be lengthened. This is common on other commuter railways and is the most likely short-term option.
4. **Northern Ireland Railways.** They have the same rail gauge. If they have SDO, possibly trains could be borrowed or ordered from their supplier.
5. **Manual override.** Assuming each door can be disabled, in case of failure possibly a staff member can disable over length carriages approaching Rathdrum.
6. **6 carriages.** Can extra carriages be inserted with less than full length and extend platforms that length? A few Wicklow diesels are 5 carriages long currently.

Extra DART's.

With the present signalling and track it is possible to run an extra DART or diesel through Greystones at 07.21 and 08.21. A DART must be waiting in Greystones before rush hour as there are no vacant slots Southbound at those times. As happened before they can be rundown early in rush hour or possibly a covered siding could be built for overnight parking. It is understood an extra 8 carriage DART set will be needed for this. Appendix 3 shows that this line has the least number of Peak Services of any in the GDA, most even outside the GDA have more. The 07.21 slot should be a diesel and the 08.21 a DART.

² See Appendix 2

An alternative would be to put 4+ sidings at Greystones, stable DARTs there and send North at 07.15, 07.30, 07.45, 08.00 cancelling the 2 South services which would clash. Council land is available in the Park n' Ride and golf area. These could be moved to adjacent vacant Council and IDA land. This would need to be moved forward soon before that land is used.

Increasing capacity Bray-Greystones. This is key to increasing capacity as it is the busiest section. An extra 50% trains can be accommodated without the expensive option of tunnelling twin tracks through Bray Head. The journey times in Appendix 2, taken by stopwatch, show a time of 9min 35sec. and 9.55 station to station. The difficult Cliff Section took 4m 50s and 5m 25s both directions. The 'contention time' can be reduced to this by:

Double tracking the line within Bray Station and probably slightly South. DARTs spend 1m 30+ s within the sidings section as they go slowly here. This alone would save 15% of the contention time and help keep the trains on time as they can set off earlier. This land is controlled by IR.

Double Tracking from Greystones to Bray Head Tunnel. It appears that there is enough space to put 2 tracks to Bray Head. This would include digging out a rock cutting and replacing a road and pedestrian bridge. At the time of planning the Marina development Irish Rail stated it wanted enough land left to double track here. A detailed survey needs to be done to establish whether there is the width required. This would save 2m 40s of contention time.

Faster Signalling. Signalling on a heavily used single track section needs to change quickly. It is understood that faster changing signals were installed in the city centre and this signalling system would seem appropriate here. There are presently 2 signal sections here and having 3 would assist with positioning trains. It would also help smooth out coping with the significant delays on this section.

Station Improvements. Appendix 2 contains a survey of each station and lists improvements needed, generally small apart from platform length. It includes better information, more Park n' Ride and wheelchair access at Greystones. These improvements should allow a 20-minute service as well as better interworking of diesels. Alternatively, the Greystones DART could remain at 30 minutes frequency but with extra DARTs and diesels at rush hour.

Diesel Shuttle to complement direct diesels. A diesel shuttle should be run in between the current diesels from Gorey/Arklow to Greystones then back to Wicklow, using a passing loop at Newcastle. This could then form a 4th train from Wicklow and possibly interchange at Bray with the more frequent service. This could work during the day and provide interconnection between towns which is poor. It would require some of the track improvements around Bray Head.

Erosion. Irish Rail is spending a considerable amount protecting the line from Greystones to Wicklow

If this is not done the line would be cut, some houses and a lot of land flooded. Arguably this is a National Government responsibility and should include the beach south of Bray Head.

Other Alternatives

Bray Head Double tunnel. This would eliminate the overcrowding at the most crowded section and enable many more trains South of Bray but would be very expensive. Also, the tracks further in are crowded so capacity enhancement would be limited. It is also an Area of Special Conservation which may make this difficult.

DART to Wicklow. This single track could be electrified at a cost but the frequency could not be better than 40 minutes given the time taken and the long single-track sections will make timekeeping difficult. It would still need enhancement from Greystones to Bray. There is also an Area of Special Conservation which may make this difficult.

Express buses. The 84x service is very successful with 8 morning rush hour services and 2 during the day. Using Bray Southern Cross they skip Bray Main Street, avoiding most traffic, and take the N11/M50 to Loughlinstown and then the bus lane. The author carried out a usage count in November 2015 and there were good peak loadings leaving Greystones and would expect many more passengers from South Bray. People mention to him how well it works, praise normally being rare.

A similar service is needed on the N11 from Newtown, Wicklow and Arklow. Park n' Ride and bike parking should be provided, with CCTV, at a number of places; Glenview, Willow Grove/Kilpeddar, Newtown, Rathnew and Arklow. It should skip Bray, but have a connection to it by stopping at the Enniskerry turnoff or Fassaroe. It should not get involved in traffic jams in these areas but stop close to or at the roundabouts on the N11. Some, at rush hour at least, should go on the M50 to Cherrywood & Sandyford junctions and LUAS at Red Cow where many Wicklow people work. If people are to be enticed out of their cars journey times must be somewhat comparable to the car and thus buses must use the M roads.

Some bike parking should be provided for the 84x and possibly car parking places at Kilcoole or Newcastle. Some feeder buses are needed.

Priority for Wicklow Buses in Co. Dublin. Wicklow's train service is being restricted by the continuous increases in priority given to Co. Dublin. This is the only geographic sector where the longer services are being made poorer. A compensatory extra bus priority is needed for

Wicklow's long-distance buses, the 84X and N11 express. Cycling and the LUAS are short distance methods of commuting within Co. Dublin. Yet in College Green major priority has been given to cycling and LUAS at the expense of the 84X. There is also much discussion about giving more priority to cyclists. Wicklow's long-distance buses must have a high priority on the N11 and Dublin City centre over shorter distance transport such as cycling and LUAS.

Rail Technical studies. Many of these suggestions were made to the consultation process when deciding the Transport Strategy. It is disturbing that the consultants have instead produced a strategy for Wicklow which will fail and has previously failed. A future detailed study needs a Wicklow input at the technical discussion level as the choices made up to now have been to provide a much better service to Co. Dublin at the expense of a much poorer service to Wicklow. Most parts of the GDA, and outside it, are planned to get an improved service.

The Author understands that Japanese Railways manage high capacity use of poorer quality lines. Someone with that knowledge needs to review the Wicklow line plans. It would be useful to examine why the DART is slow and whether the seemingly long boarding times and slow door opening can be

speeded up. The author would like also to review it before it is finalised. Hugh Cregan of the NTA told Wicklow Co.Co. that a rail study would be commenced, a timetable and terms of reference are needed. The Steering Group should have a Wicklow input.

The author: Cllr. Derek Mitchell, BAI, MSc, FCA wrote a 30-page study 'Rail Options for Greystones' in 1992. The Managing Director of Irish Rail, C. D. Waters, stated that this had studied the issue in more detail than Irish Rail and he broadly agreed with the conclusion; to extend DART. The subsequent usage figures have exceeded the projections in the study. He initiated Wicklow County Council and DTI providing the Greystones Park n' Ride, with 500 spaces by far the largest on the DART network and fully used.

Appendix 1.

Detailed description of Greystones to Bray DART journey and times.

Times from leaving Greystones.	
Entrance to tunnel.	2min 40sec
Cutting at Bray Cliff Path bridge	7min 30sec
Start sidings	7min 54sec
Goes slowly to Bray station	
Bray stop	9min 27sec
Return times from leaving Bray.	
Leave siding area	1min 45sec
Start cliff	2 min 32 sec
Out tunnel	7 min 18 sec
Points Greystones	9 Min 18 sec
Stop Greystones	9 Min 55 sec

Appendix 2.

Review of Each Station.

Greystones.

Use of a shuttle will require altering the track and platform layout to allow convenient changes. The station is now the 5th busiest suburban station and with limited services it has heavy peak loads. People must queue to get off the platform, out of the station and out of the Park n' Ride. Each of these needs increased throughput.

The gate on the sea side is often open for passengers and this needs a formal exit to enable passengers to be certain of using it, encourage use of the underused car park and provide bike parking there. More use can be expected from the 370 harbour side homes.

Station Waiting. Passengers wait a long time at Greystones, due to the infrequent service, A Shuttle will increase waiting numbers. Thus, waiting numbers are much greater than other DART stations and an enclosed, lit area is needed. The Bray Greystones track is less reliable than the rest of the DART which means extra waiting. The present plan to let the central area out should be reversed.

Bike Parking. 90 spaces have been provided by the Council and NTA. These are full and more are needed both within and outside the station. Higher density double deck storage should be used if possible.

Park n' Ride. : These 450 spaces provided by the Council and NTA, is by far the largest on the DART, is full and commuters are parking in surrounding roads. It needs to be expanded to cater for a large catchment area. Some small changes could increase it by 50 spaces. After that it should be a second storey or on land beside the Medical Centre.

Station Information. Unlike most DART stations trains for Dublin leave from both platforms. Passengers, especially the many strangers, are confused. The indicator sign is not visible from outside the ticket barrier and does not say which platform to go to. The author has asked many times for a TV monitor in the station building to provide information on both platforms. This exists in Bray so it can be done. Information on delays and cancellations is poor. A cancellation involves at least a 30-minute delay. When a train from Bray is cancelled (and thus the return journey also) the platform sign does not show it but there is no statement of delay. The Irish Rail 'live trains' app shows the train as running.

People are very confused as they expect 'live app' to be accurate. Delayed passengers can get the slower, 84/184 bus across the street but need to be told when it is coming and to get it. The Managing Director of Irish Rail has agreed to send a person to Greystones when there are delays to inform people so there needs to be facilities for manning the station.

3 ticket machines and the station is mostly unmanned. More ticket machines are needed.

Kilcoole Halt.

Platform about 6 carriages long served by 2 trains a day each way. It has a straight track so it could be extended to 8 carriages. There are approximately 35 parking spaces and, 25 are used. There is no bike parking or no CCTV. 6 passengers got off 07.44 from South to go to work locally. It needs better waiting facilities including a shelter, a covered bike parking and a footpath from the village and CCTV.

Wicklow Town.

Platform 6 to 8 carriages long but could easily be extended. Rail loop very long. Plenty of space for siding to store 4 carriages if train split. 135 car spaces, 110 used. 10 bike spaces. 7 used. 2 ticket machines and station manned. More parking should be identified and reserved for this large town.

Rathdrum.

Platform 4/5 carriages long. Rail loop short. The loops could be extended with minor earth works probably to 8 carriages. Extending the platform would need cutting into a rock embankment on either side a short distance. No buildings would be in the way. Possibly a platform could be hung off the bridge and the line could be 'blocked' by a rush hour long train as in Kilcoole. The passing loop looks little used. 25 parking spaces, 15 used. 8 bike spaces, none used, a hilly place. 1 ticket machine.

Arklow.

6 carriages long but space for extending to 8 carriages. Rail loops are long. 130 car spaces, 20 used. 24 bike spaces, 1 used. 2 ticket machines and station appear manned.

Gorey.

Platform 5/6 carriages long but looks like it could easily be extended to 8 carriages. Rail loops look long enough for 8 carriages.

90 car spaces, 30 occupied. 10 bike spaces, 1 used. 2 ticket machines and manned. Interestingly 20 cars were informally parked at the motorway junction and looked as if they got the bus daily.

Summary.

Extending platforms to 8 carriage length appears to be a small job for all stations except Rathdrum. Alternatively, an 8-carriage train could be split in Wicklow Town.

Appendix 3

Wicklow Rail Plan: Journey Time to Connolly Station December 2017

Inside Greater Dublin Area	Daily 2016 Boarding	Journey Time 2016	Distance Connolly Km	Number of Trains in Peak Period	Average Speed KPH
Bray	3144	44	22	8 [soon 11]	30
Greystones	1927	53	34	6	38
Kilcoole	39	58	37	2	38
Wicklow Town	168	68	51	2	45
Rathdrum	68	80	60	2	45
Arklow	85	98	71	2	43

Outside Greater Dublin Area	Daily 2016 Boarding	Journey Time 2016	Distance Connolly Km	Number of Trains in Peak Period	Average Speed KPH
Gorey	73	111	89	1	48
Drogheda (stopping Train)	1086	55	48	7	52
Dundalk	579	87	82	4	57
Longford	254	110	120	2	65
Carlow Heuston sta.	745	64	81	3	76
Bus					
Greystones 84X	240	70	34	8	29
Wicklow Town 133		85	51	5	35
Arklow 133 & 133X		100/85	71	2	42

Notes: Peak Period is defined as from 6.30 to 8.00am.

Greystones 1955 steam train to Harcourt Street journey took 35 minutes

Greystones 84X usage counted 2015.

133 Bus skips Bray at Peak Period. Difficult to commute to Bray from South on N11 bus. Some means of stopping bus on N11 at Enniskerry junction needed for interchange.

Conclusion

- The service to Wicklow is very slow, the slowest of anywhere even before it is slowed down in 2018, mainly because of the number of DART stops
- The waiting time at each station seems long in comparison to overseas railways.
- There is an urgent need for an extra Peak hour service South of Greystones. Many places outside the Greater Dublin Area have more trains, a better service and thus much better usage. For example, Carlow has a 4 times higher train usage than Wicklow Town though further from Dublin