

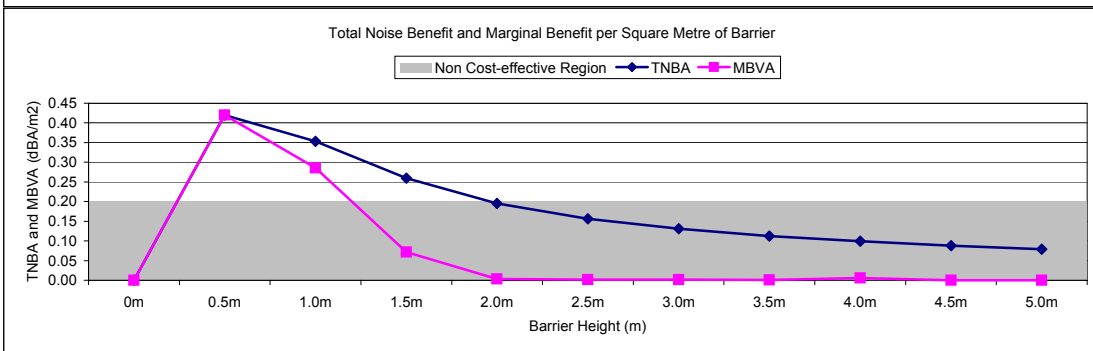
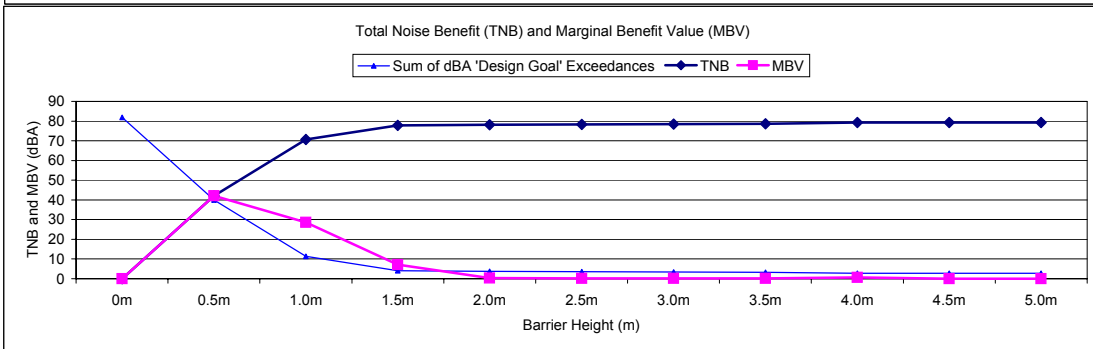
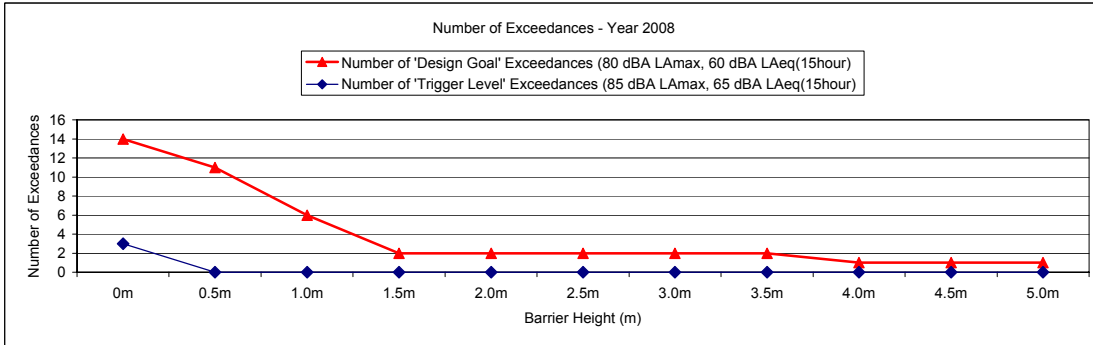
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

Sub-catchment Dn-A

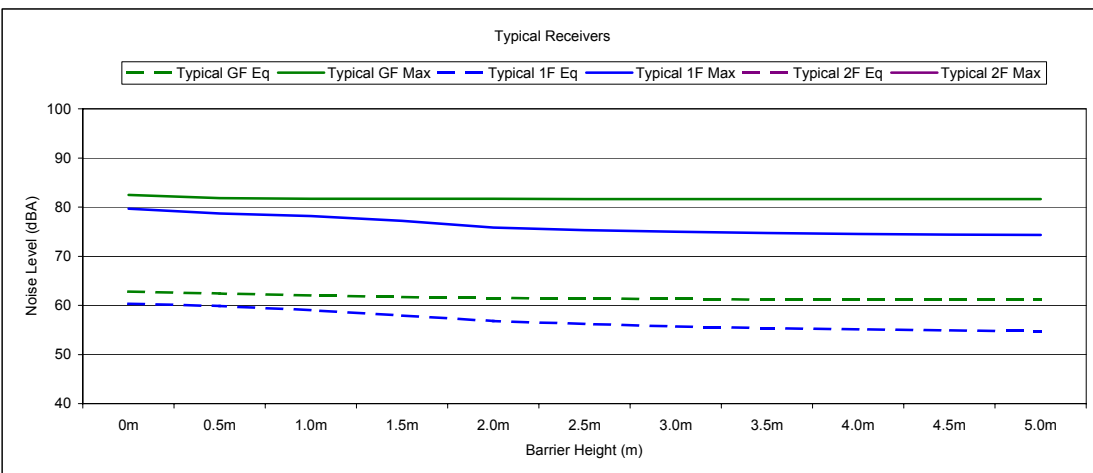
For this sub-catchment, the noise barrier starts at Track Chainage 14.18 km and ends at Track Chainage 14.38 km (200 m)

At this locality, the railway line is on embankment at Chainage 14.18 km and in cutting at Chainage 14.59 km. The Barrier heights in the below plots represent the height of the noise wall above the Top of Rail (TOR).

The selected barrier height at this location is 1.0 m high, resulting in an overall barrier height of approximately 2.0 m (above the retaining wall).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



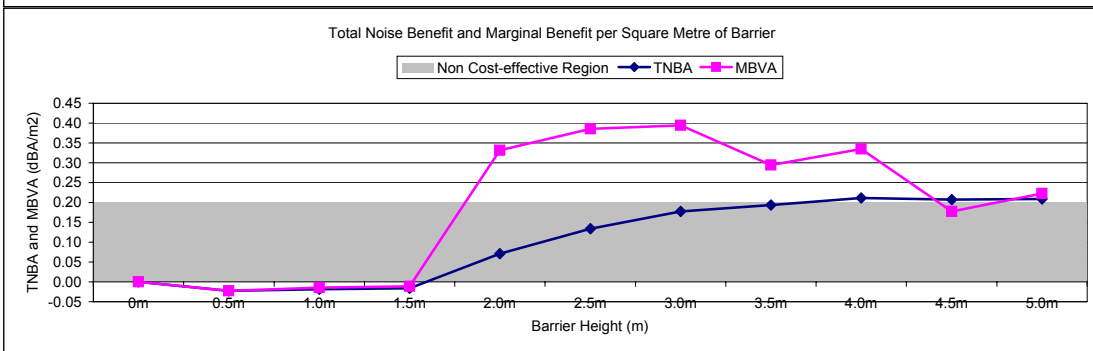
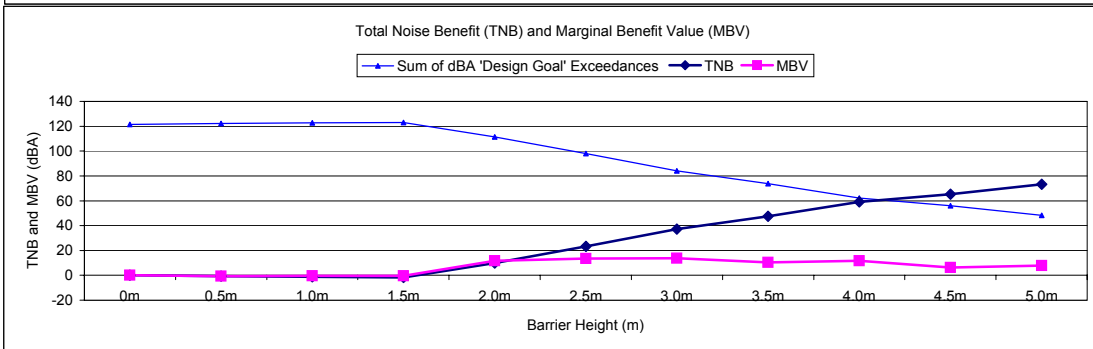
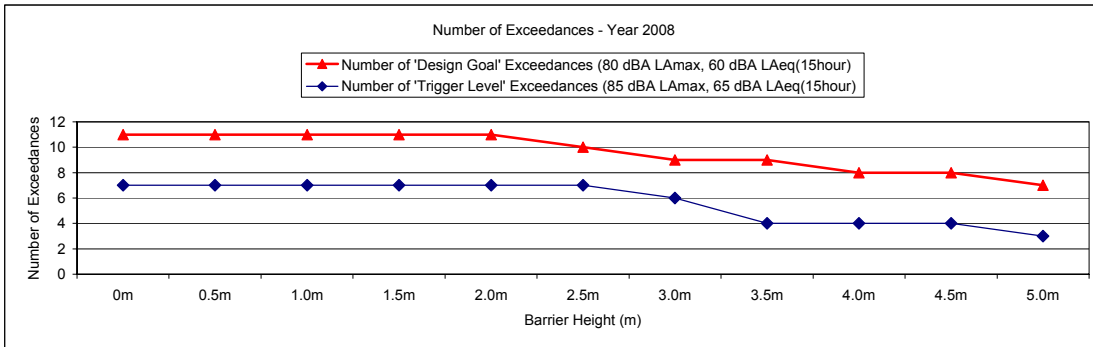
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

**Sub-catchment Dn-B2**

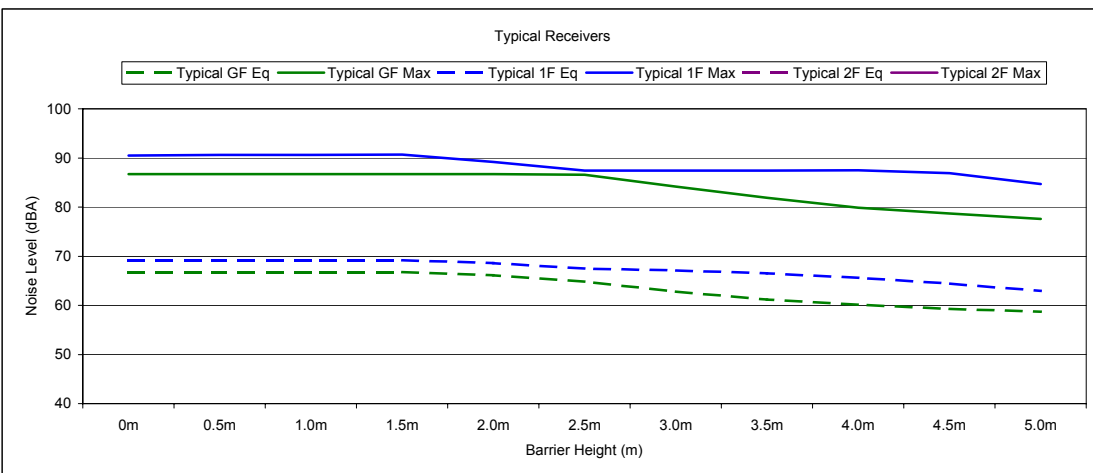
For this sub-catchment, the noise barrier starts at Track Chainage 14.9 km and ends at Track Chainage 14.97 km (70 m)

At this locality, the railway line is within cutting. The Barrier heights in the below plots represent the height of the noise wall above the cutting.

The selected barrier height at this location is 4.0 m high, resulting in an overall barrier height of 4.0 m (above the top of the cutting).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



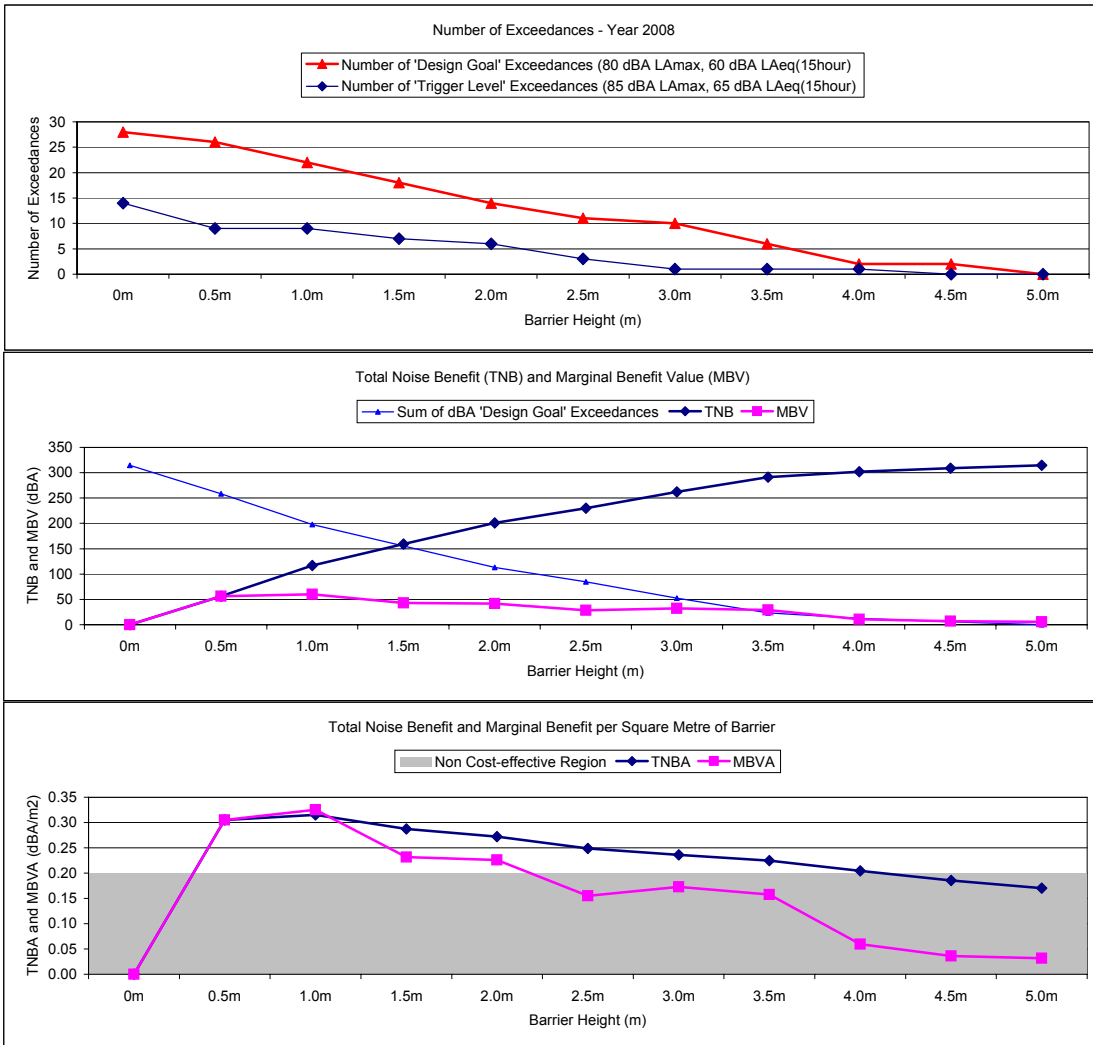
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

Sub-catchment Dn-C

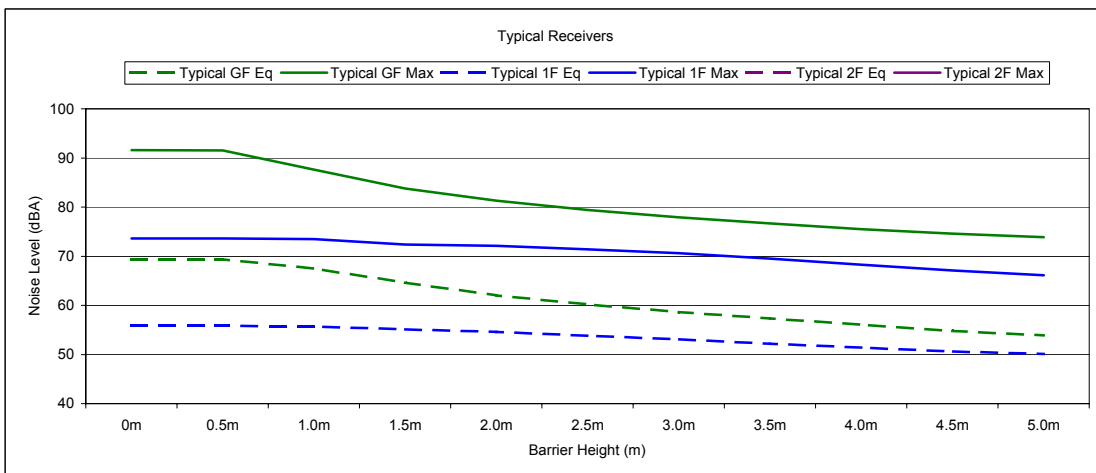
For this sub-catchment, the noise barrier starts at Track Chainage 14.97 km and ends at Track Chainage 15.34 km (370 m)

At this locality, the railway line is within cutting at Chainage 14.97 km and on embankment at Chainage 15.07 km. The Barrier heights in the below plots represent the height of the noise wall above the cutting and the height of the noise wall above the Top of Rail (TOR) at the embankment location after Chainage 15.07 km.

The selected barrier height at this location is 3.0 m high, resulting in an overall barrier height of 3.0 m at the top of the cutting and approximately 4.0 m high (above the retaining wall).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



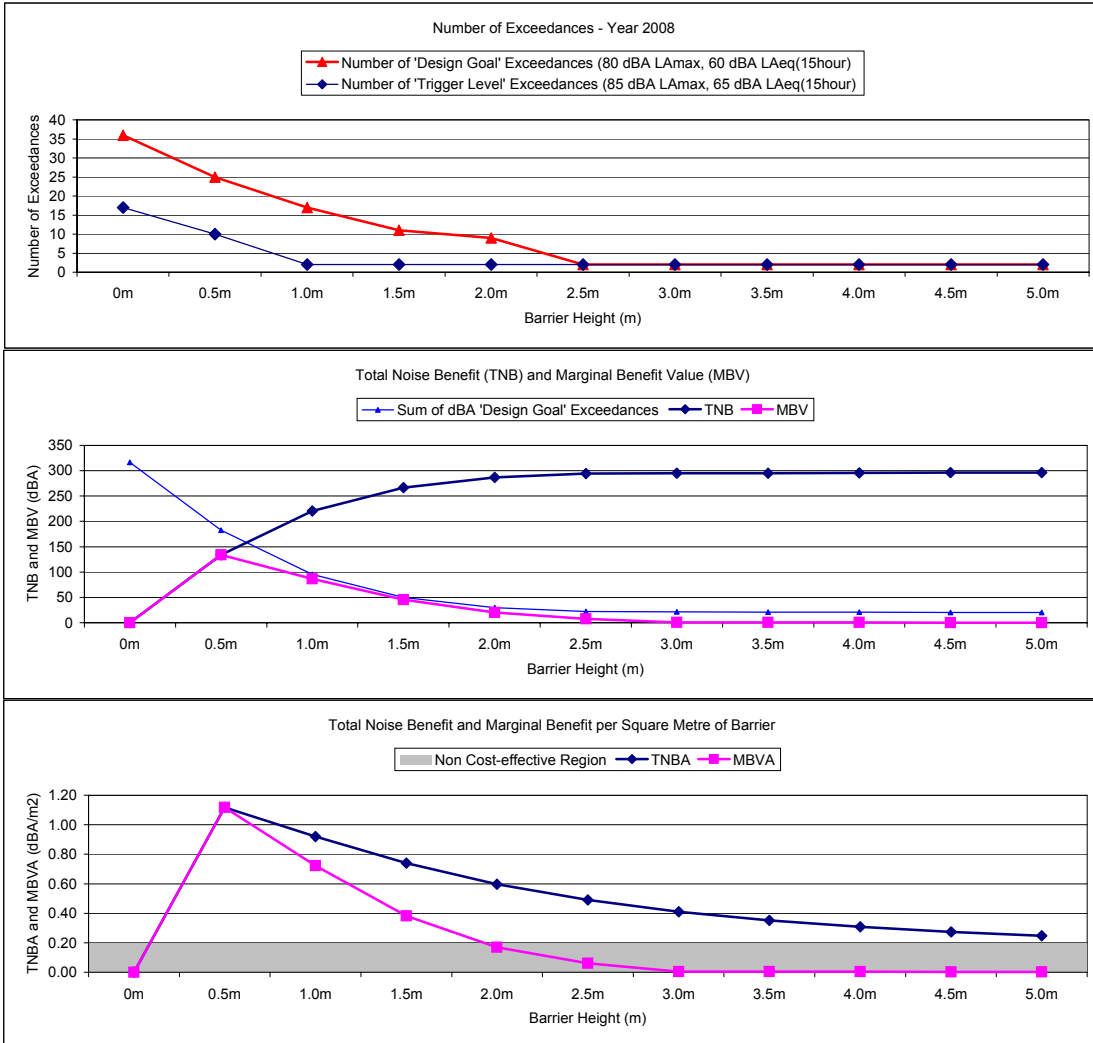
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

**Sub-catchment Dn-D**

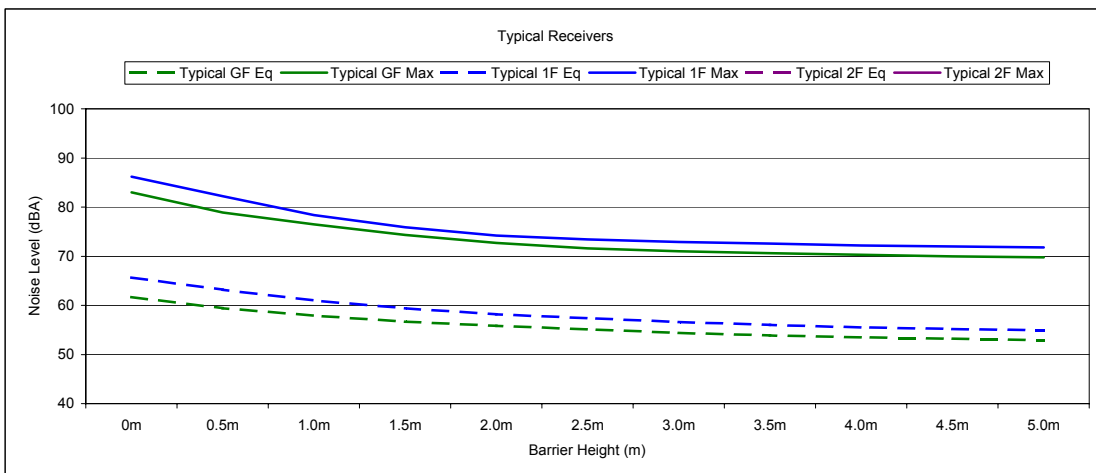
For this sub-catchment, the noise barrier starts at Track Chainage 15.41 km and ends at Track Chainage 15.65 km (240 m)

At this locality, the railway line is on embankment. The Barrier heights in the below plots represent the height of the noise wall above the Top of Rail (TOR).

The selected barrier height at this location is 1.5 m high (above TOR), resulting in an overall barrier height of approximately 2.5 m (above the retaining wall).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



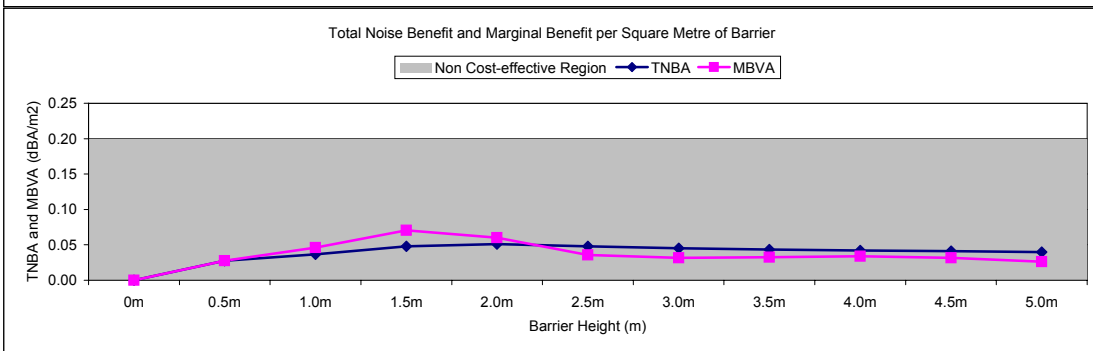
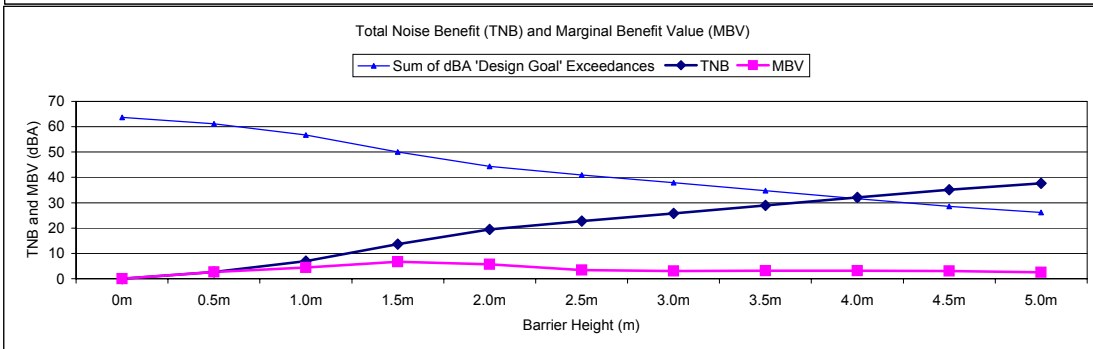
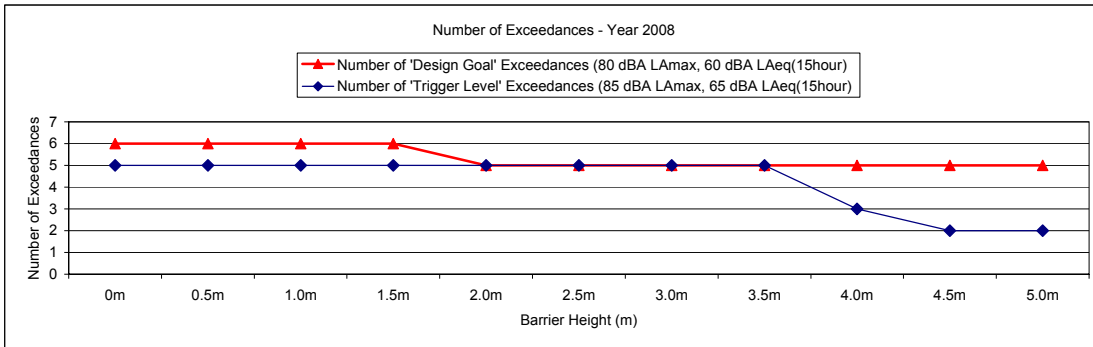
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

**Sub-catchment Dn-E**

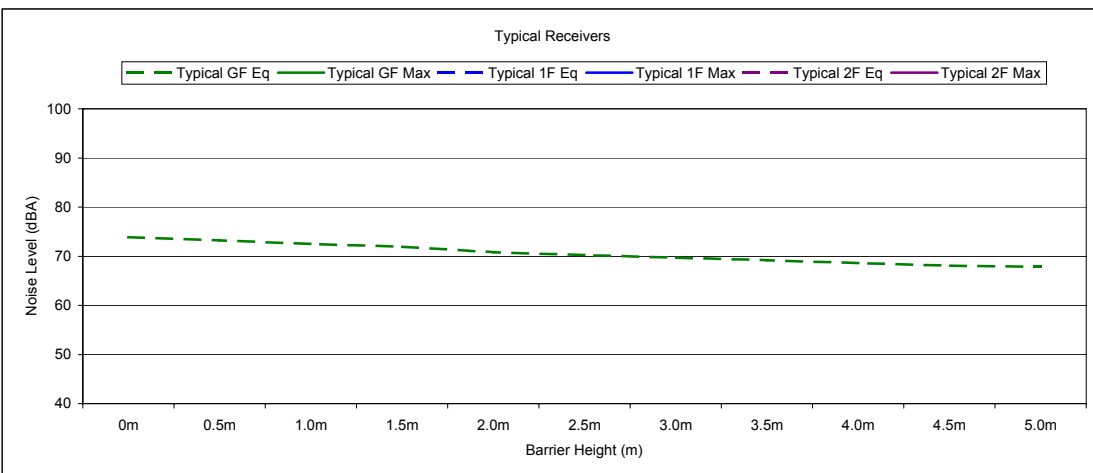
For this sub-catchment, the noise barrier starts at Track Chainage 15.78 km and ends at Track Chainage 15.97 km (190 m)

At this locality, the railway line is within cutting. The Barrier heights in the below plots represent the height of the noise wall above the cutting.

The selected barrier height at this location is 3.5 m high, resulting in an overall barrier height of 3.5 m (above the top of the cutting).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



Cost-benefit Curves for Noise Barrier Sub-catchment Areas

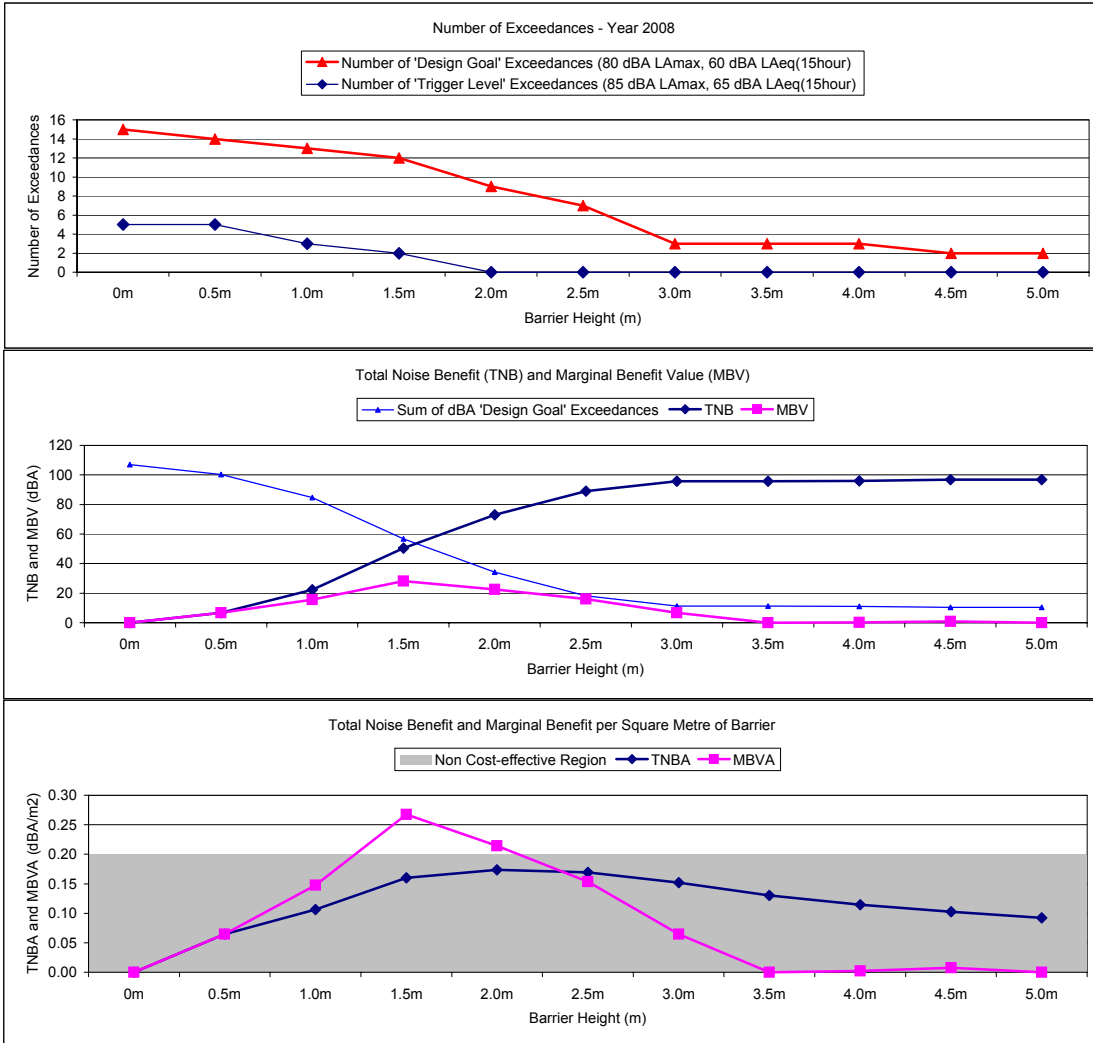
**Sub-catchment Dn-F**

For this sub-catchment, the noise barrier starts at Track Chainage 15.97 km and ends at Track Chainage 16.18 km (210 m)

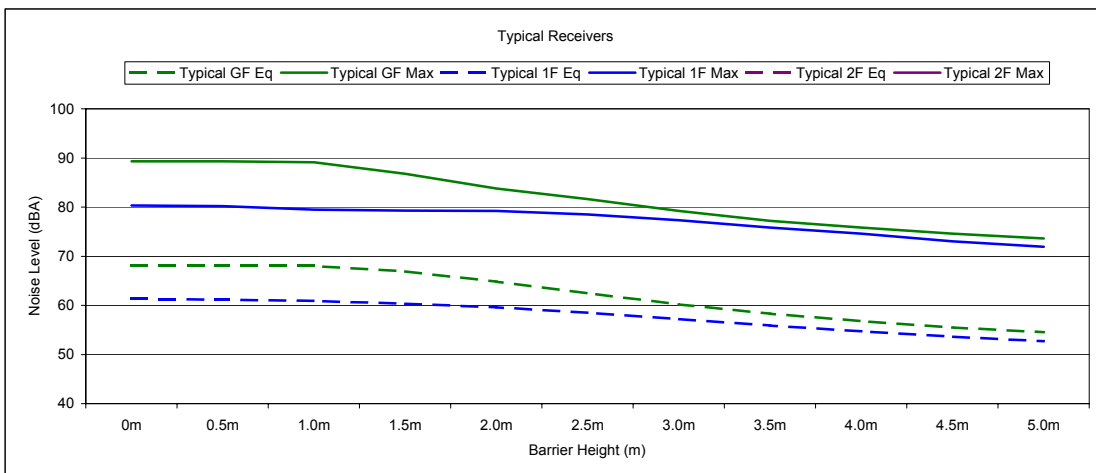
At this locality, the railway line is within cutting. The Barrier heights in the below plots represent the height of the noise wall above the cutting.

A noise barrier at this location is not cost effective as there are no barrier heights for which the TNBA and MBVA values are both above 0.2 dBA per square metre.

A 2.0 m high noise wall would reduce the number of trigger level exceedances from five to zero.



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



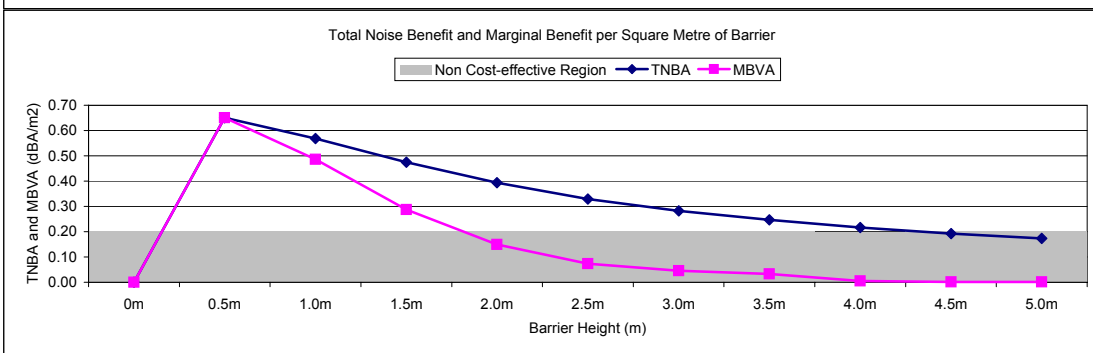
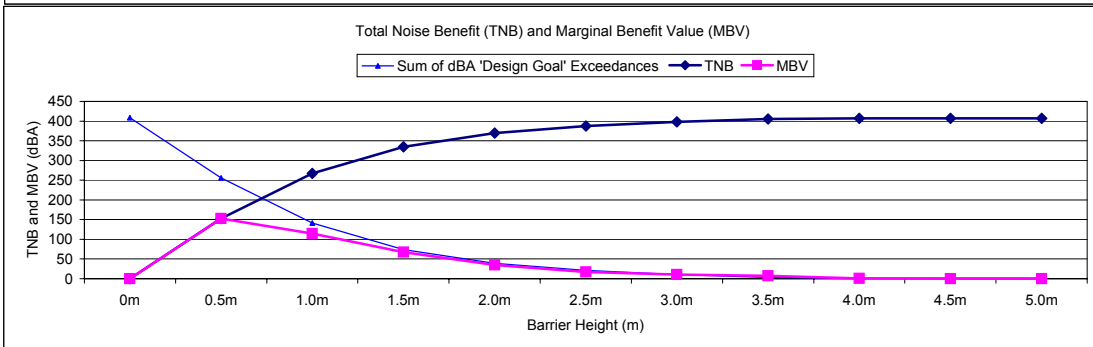
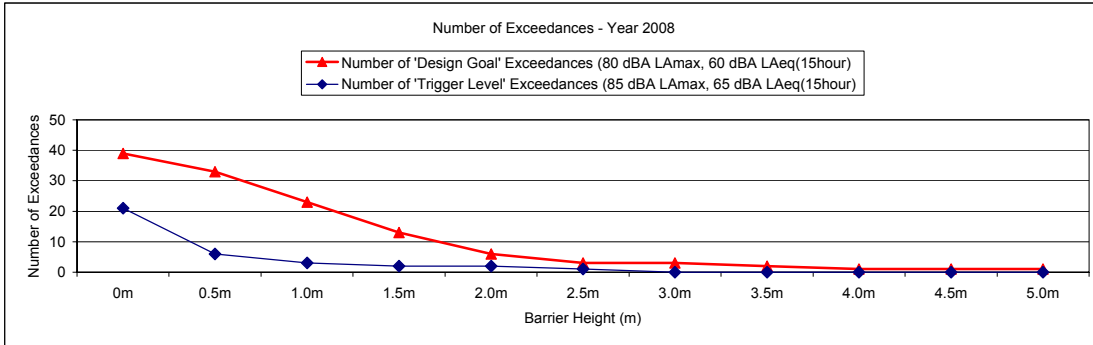
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

Sub-catchment Dn-G

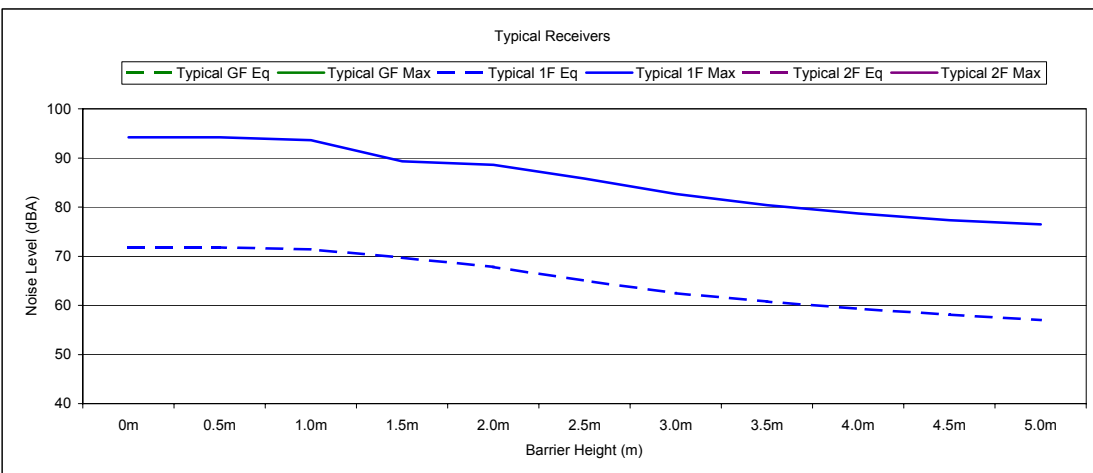
For this sub-catchment, the noise barrier starts at Track Chainage 16.33 km and ends at Track Chainage 16.8 km (470 m)

At this locality, the railway line is at grade at Chainage 16.35 km and on embankment at Chainage 16.45 km. The Barrier heights in the below plots represent the height of the noise wall above the Top of Rail (TOR).

The selected barrier height at this location is 3.0 m high, resulting in an overall barrier height of approximately 4.0 m high (above the retaining wall).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



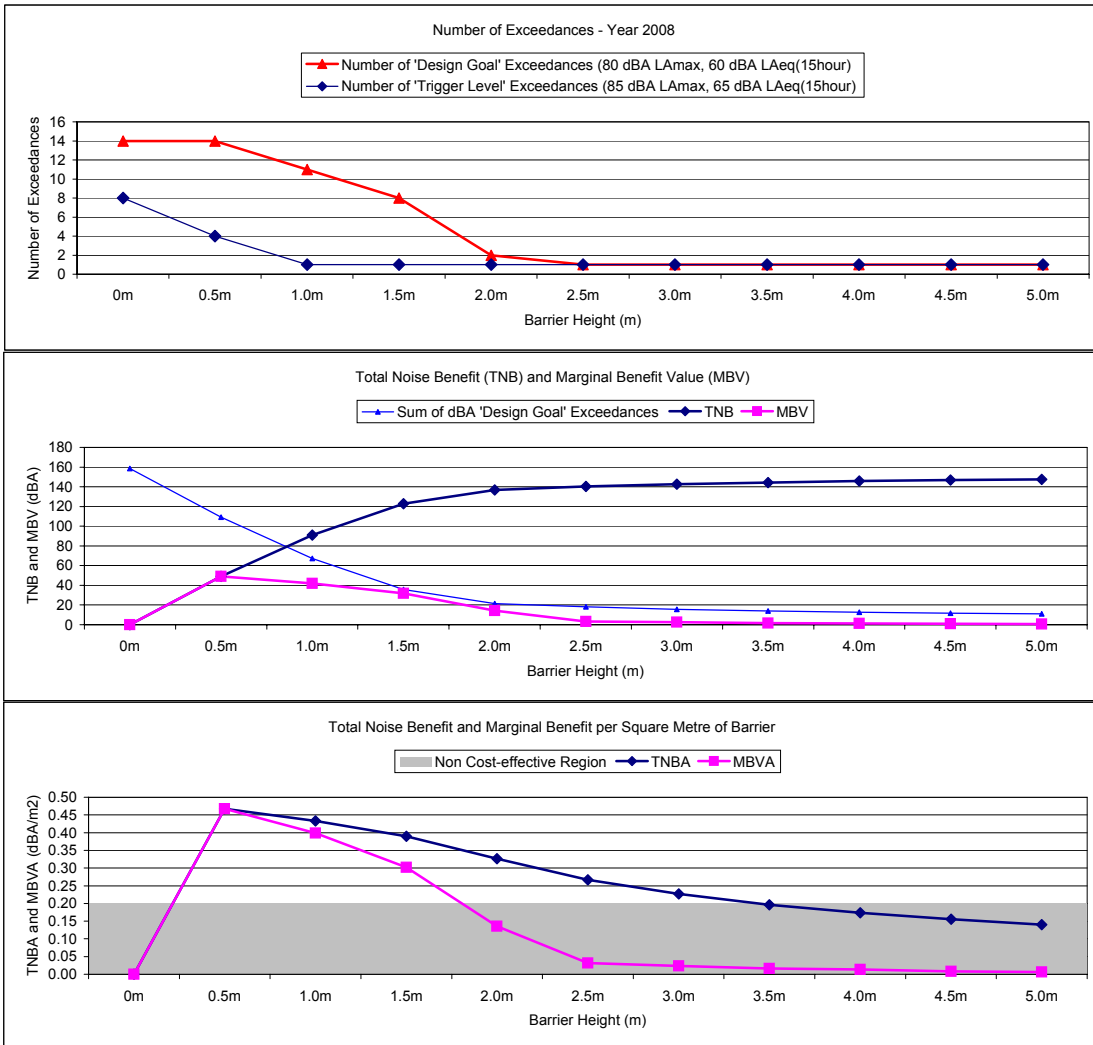
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

Sub-catchment Dn-H1

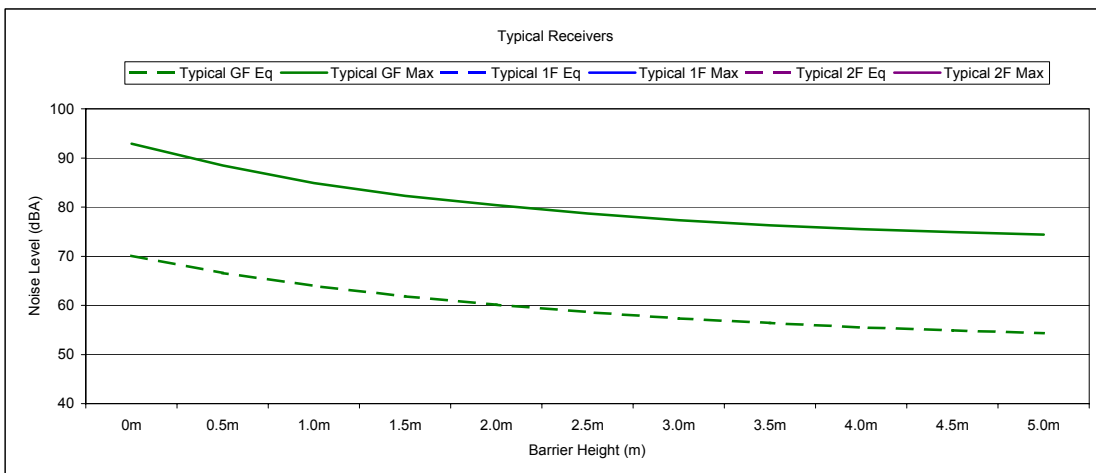
For this sub-catchment, the noise barrier starts at Track Chainage 16.8 km and ends at Track Chainage 17.01 km (210 m)

At this locality, the railway line is on embankment. The Barrier heights in the below plots represent the height of the noise wall above the Top of Rail (TOR).

The selected barrier height at this location is 1.5 m high (above TOR), resulting in an overall barrier height of approximately 2.5 m (above the retaining wall).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.





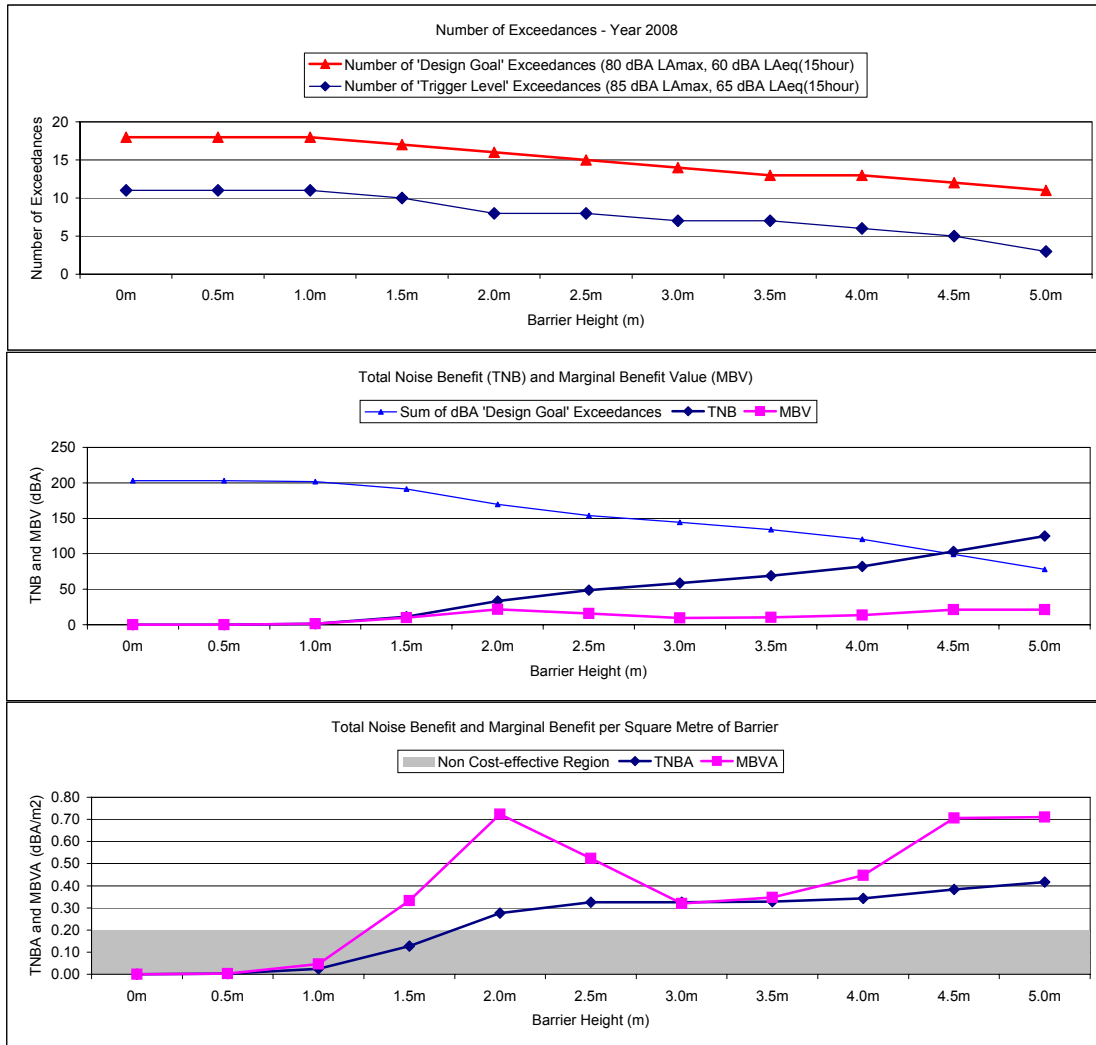
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

Sub-catchment Dn-H2

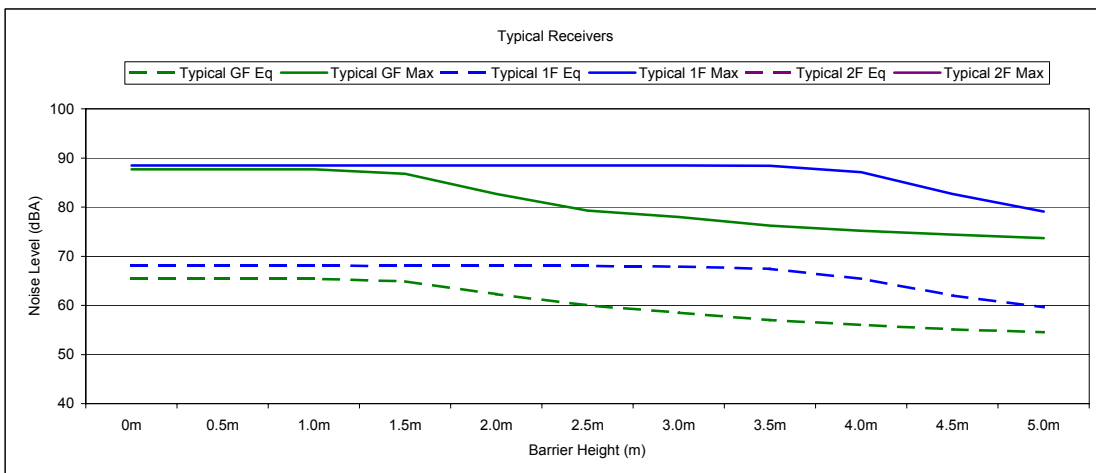
For this sub-catchment, the noise barrier starts at Track Chainage 17.08 km and ends at Track Chainage 17.14 km (60 m)

At this locality, the railway line is within cutting. The Barrier heights in the below plots represent the height of the noise wall above the cutting.

The selected barrier height at this location is 4.0 m high, resulting in an overall barrier height of 4.0 m (above the top of the cutting).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



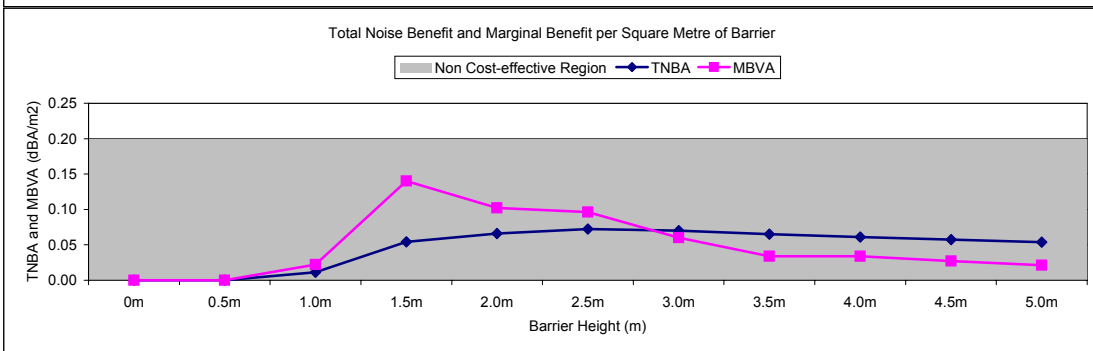
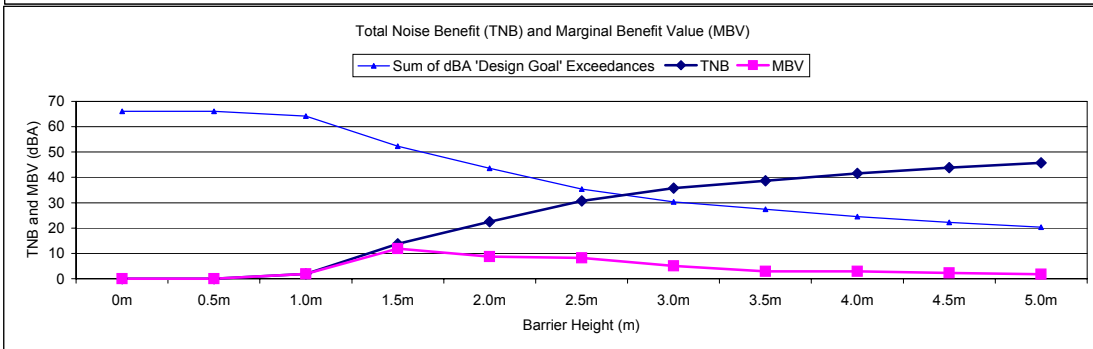
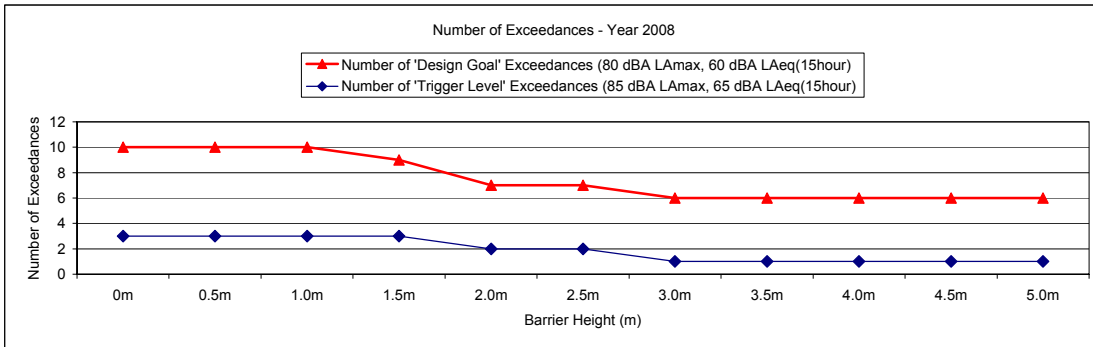
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

Sub-catchment Dn-1

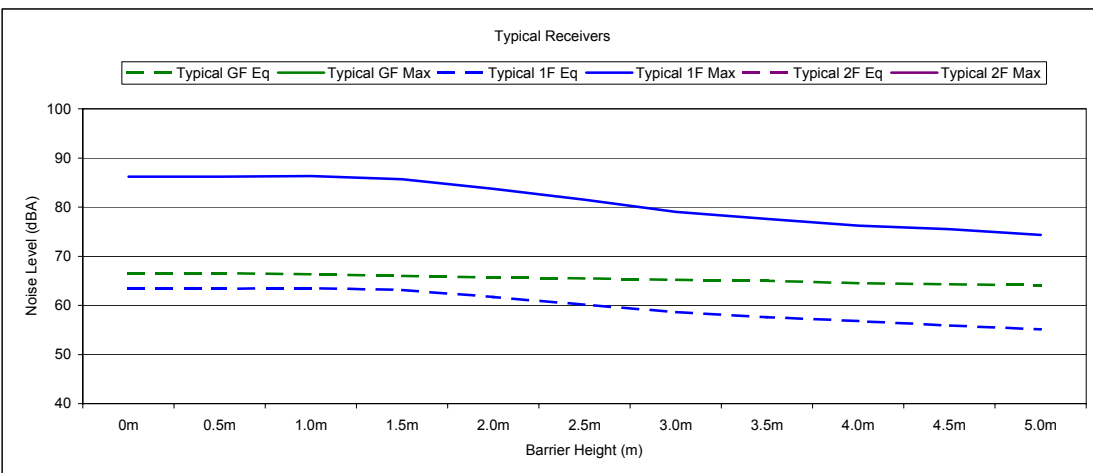
For this sub-catchment, the noise barrier starts at Track Chainage 17.14 km and ends at Track Chainage 17.31 km (170 m)

At this locality, the railway line is within cutting. The Barrier heights in the below plots represent the height of the noise wall above the cutting.

The selected barrier height at this location is 3.0 m high, resulting in an overall barrier height of 3.0 m (above the top of the cutting).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



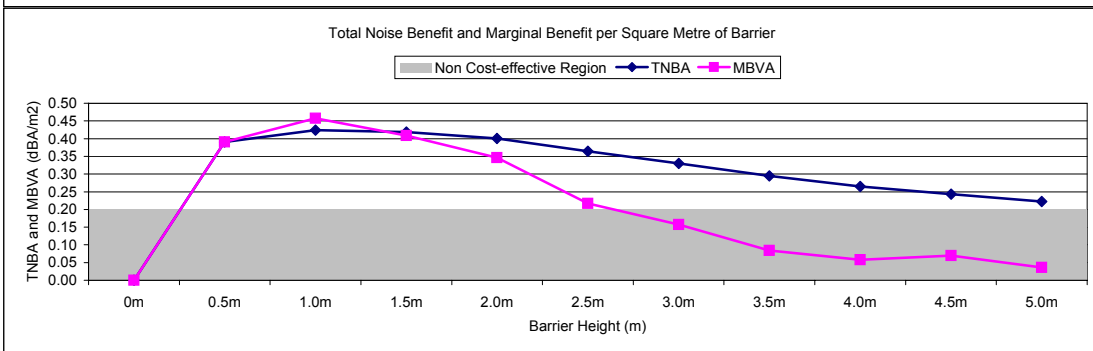
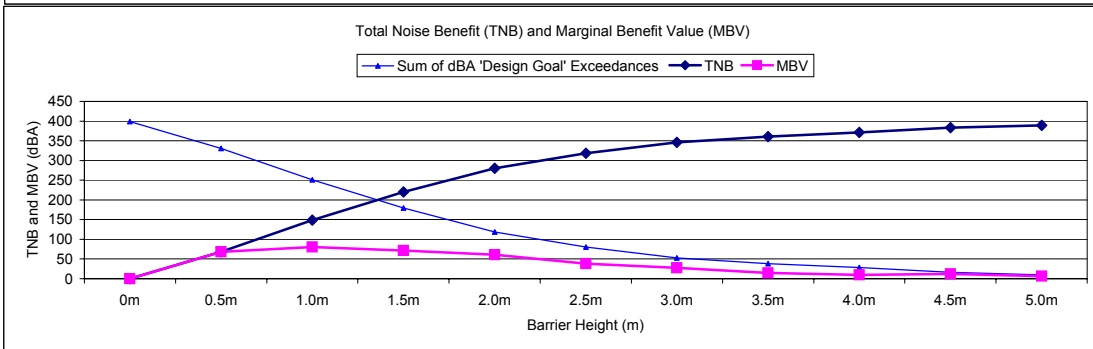
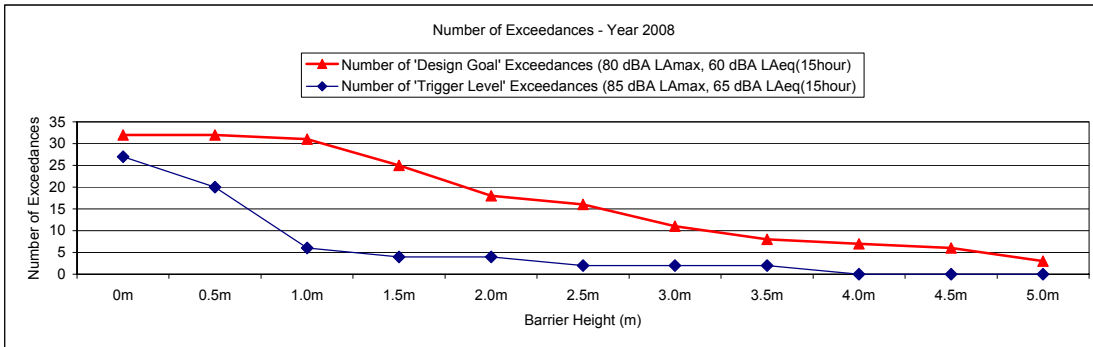
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

Sub-catchment Dn-K

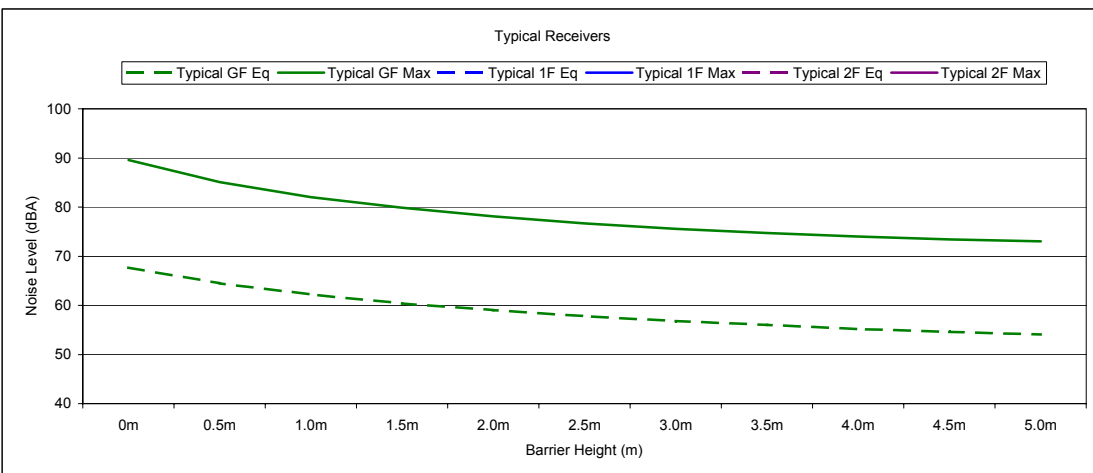
For this sub-catchment, the noise barrier starts at Track Chainage 17.65 km and ends at Track Chainage 18 km (350 m)

At this locality, the railway line is on embankment. The Barrier heights in the below plots represent the height of the noise wall above the Top of Rail (TOR).

The selected barrier height at this location is 2.5 m high (above TOR), resulting in an overall barrier height of approximately 3.5 m (above the retaining wall).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



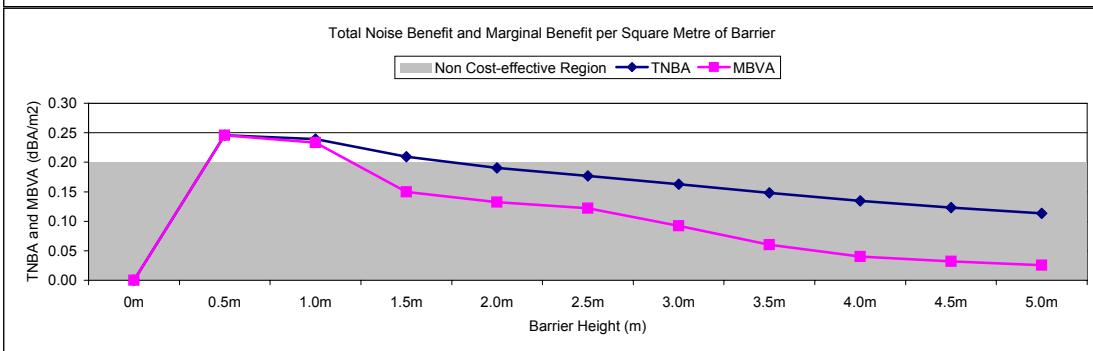
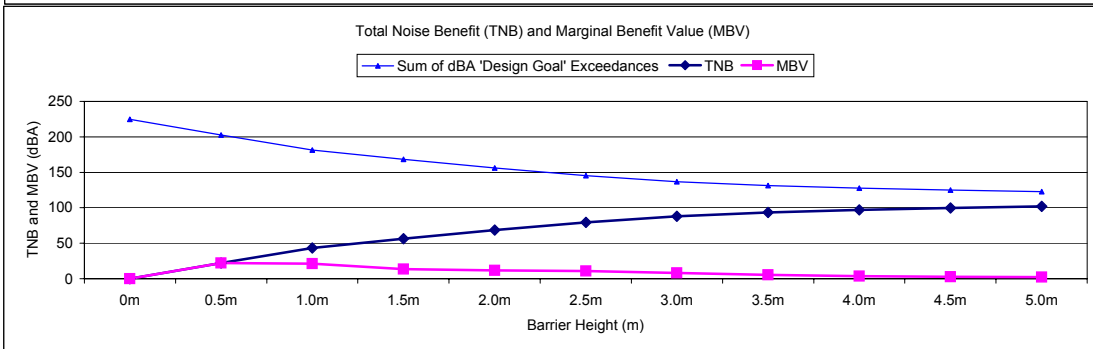
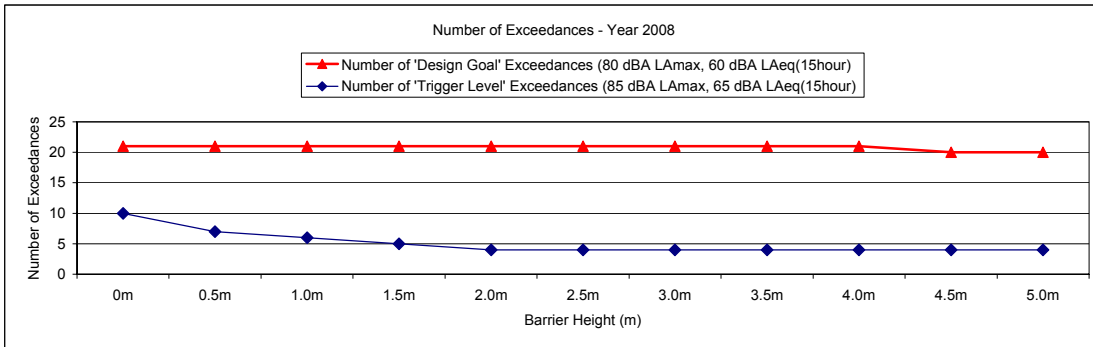
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

Sub-catchment Dn-L

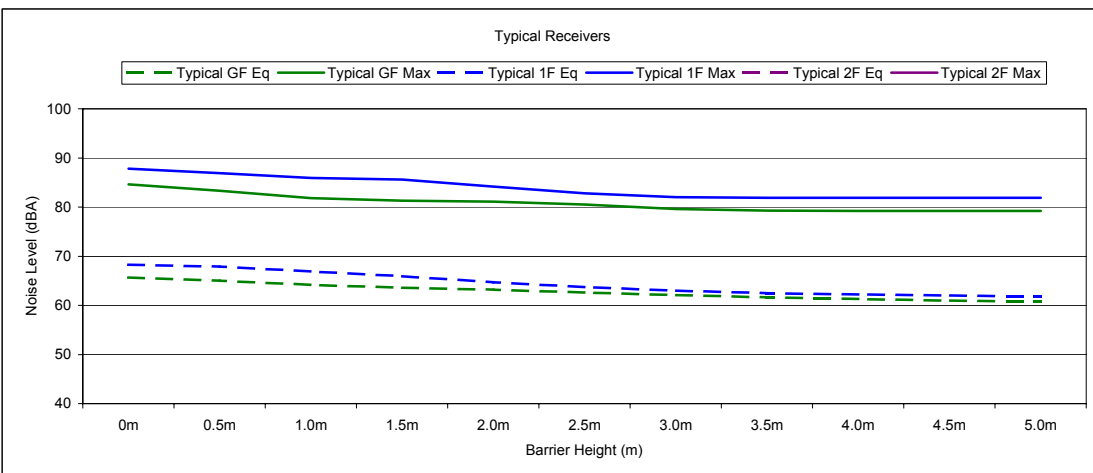
For this sub-catchment, the noise barrier starts at Track Chainage 18.17 km and ends at Track Chainage 18.35 km (180 m)

At this locality, the railway line is within cutting at Chainage 17.96 km and on embankment at Chainage 18.26 km. The Barrier heights in the below plots represent the height of the noise wall above the cutting and the height of the noise wall above the Top of Rail (TOR) at the embankment location after Chainage 18.26 km.

The selected barrier height at this location is 1.0 m high, resulting in an overall barrier height of 1.0 m at the top of the cutting and approximately 2.0 m high (above the retaining wall) at the embankment location.



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



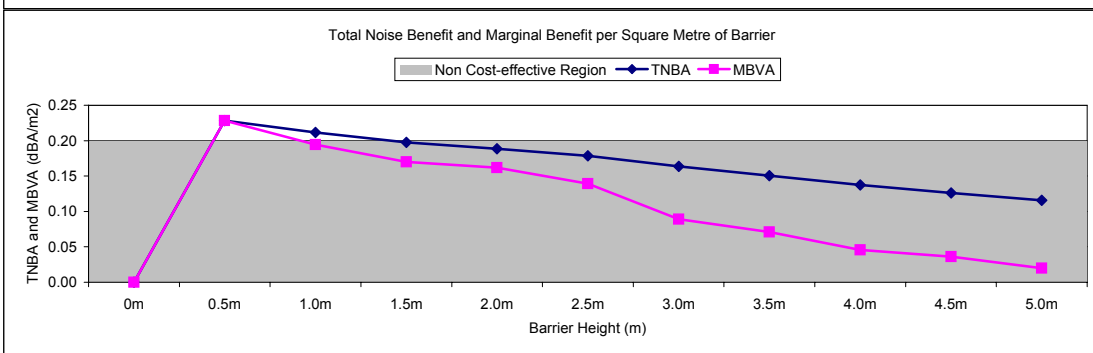
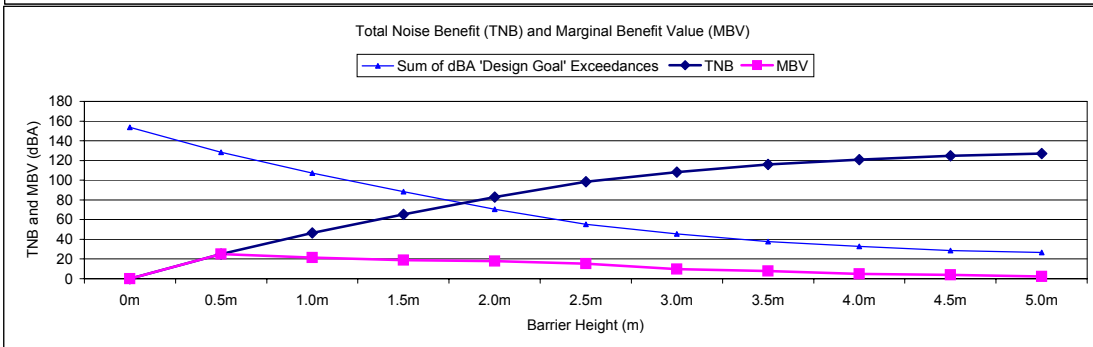
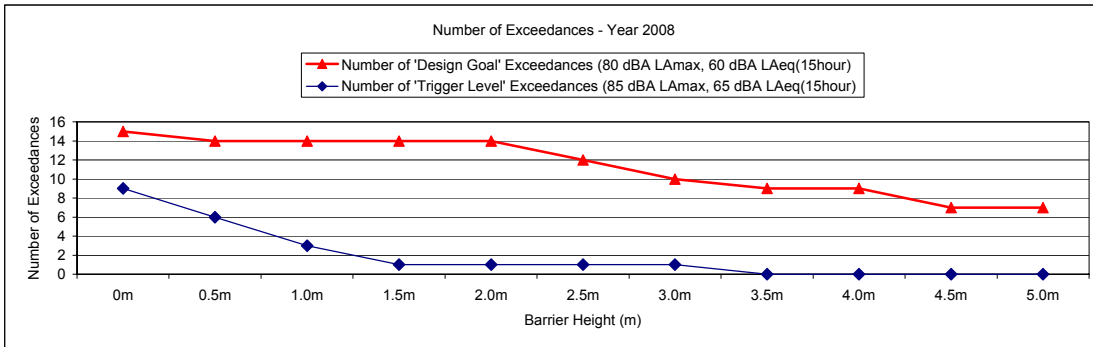
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

**Sub-catchment Dn-M**

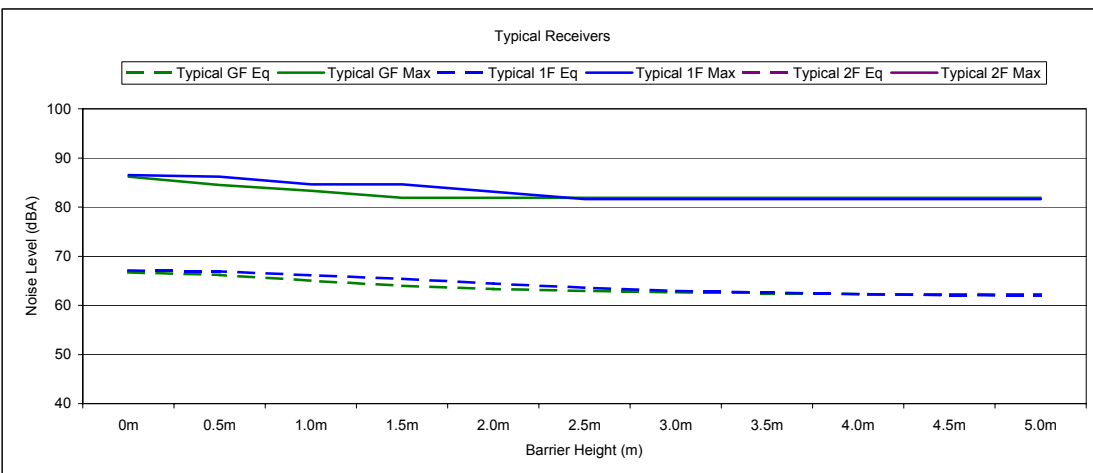
For this sub-catchment, the noise barrier starts at Track Chainage 18.57 km and ends at Track Chainage 18.77 km (200 m)

At this locality, the railway line is on embankment. The Barrier heights in the below plots represent the height of the noise wall above the Top of Rail (TOR).

A noise barrier at this location is not recommended as a 1.0 m high barrier will not provide the required 5 dBA noise reduction at any receiver locations within the sub-catchment.



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



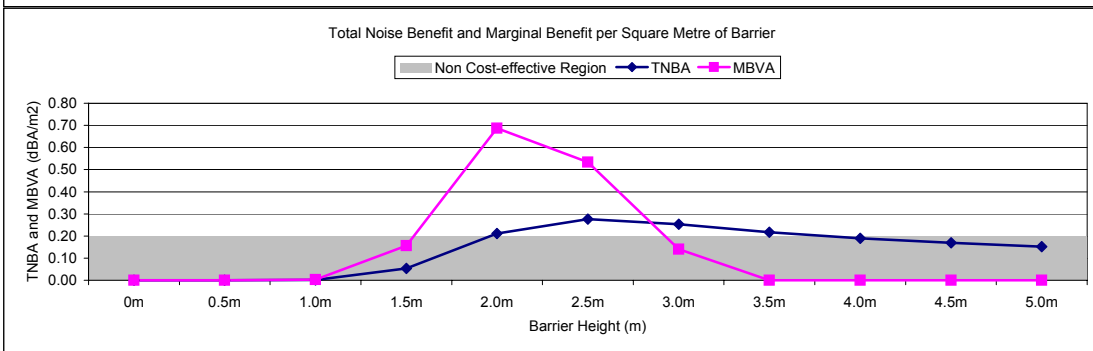
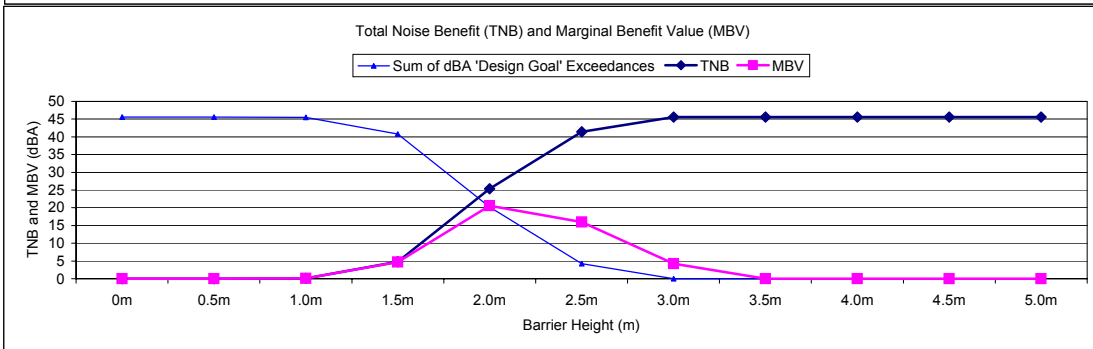
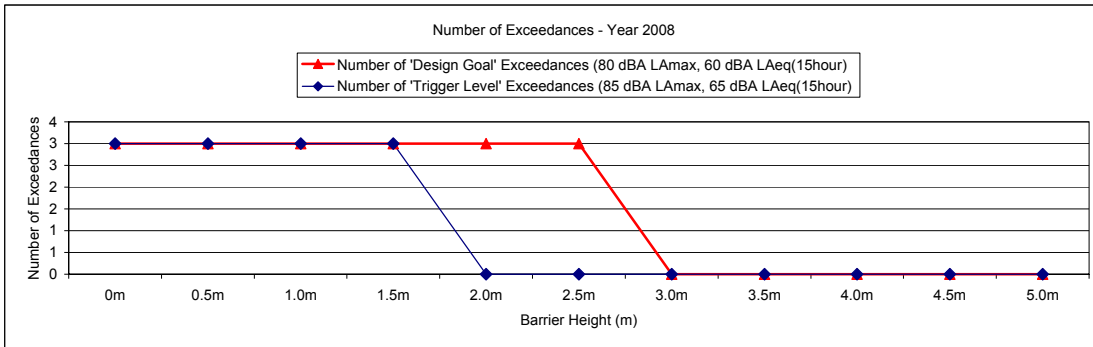
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

**Sub-catchment Dn-N1**

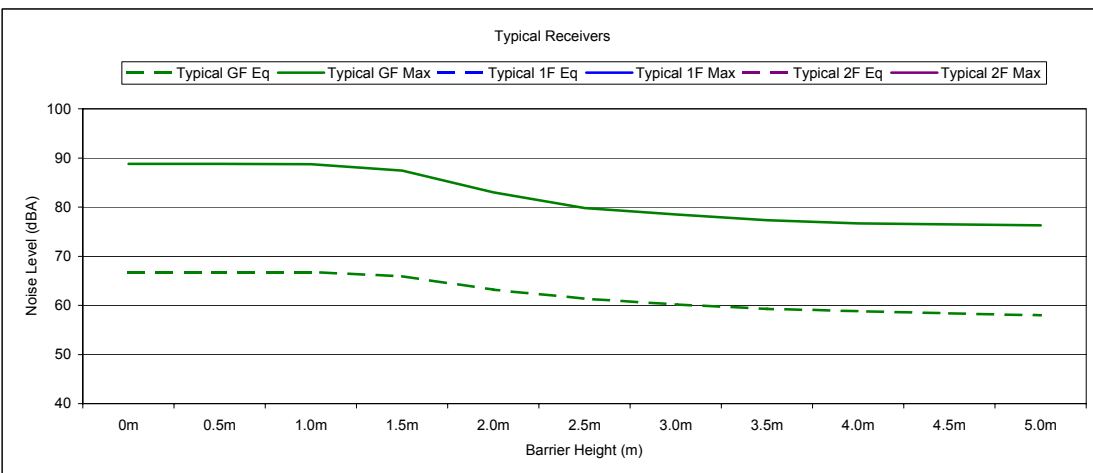
For this sub-catchment, the noise barrier starts at Track Chainage 18.85 km and ends at Track Chainage 18.91 km (60 m)

At this locality, the railway line is within cutting. The Barrier heights in the below plots represent the height of the noise wall above the cutting.

The selected barrier height at this location is 2.5 m high, resulting in an overall barrier height of 2.5 m (above the top of the cutting).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



Cost-benefit Curves for Noise Barrier Sub-catchment Areas

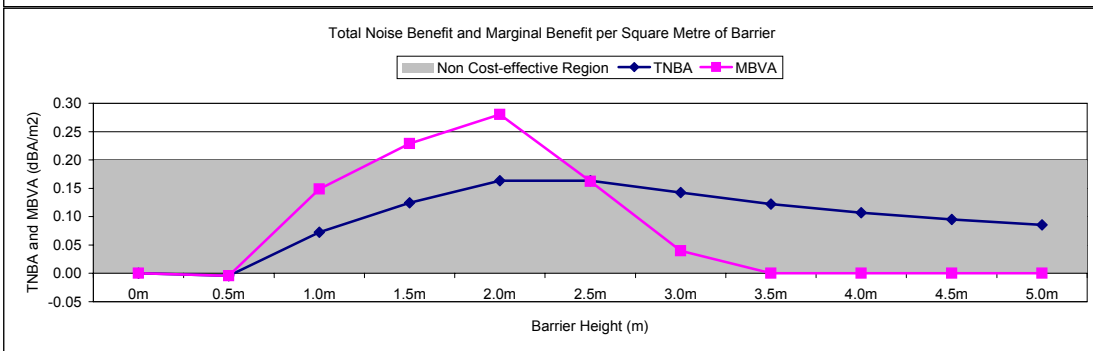
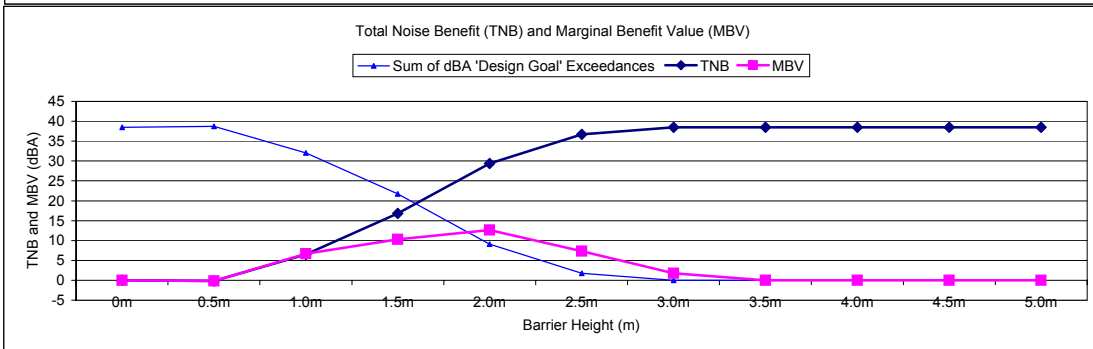
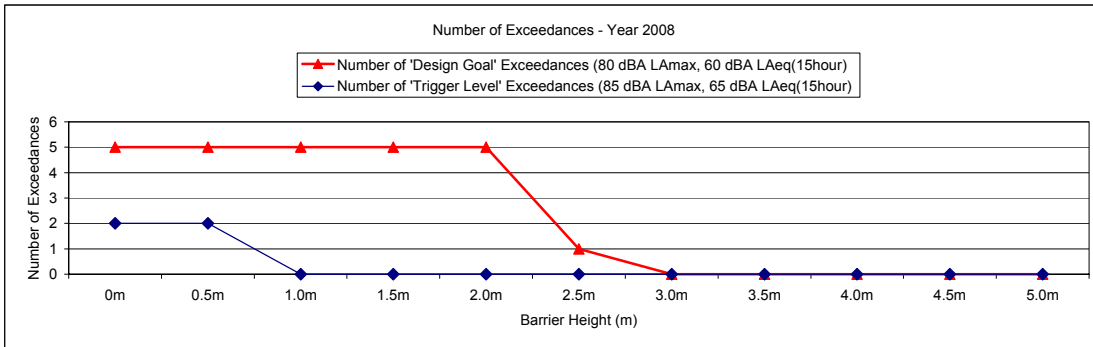
**Sub-catchment Dn-N2**

For this sub-catchment, the noise barrier starts at Track Chainage 19.03 km and ends at Track Chainage 19.12 km (90 m)

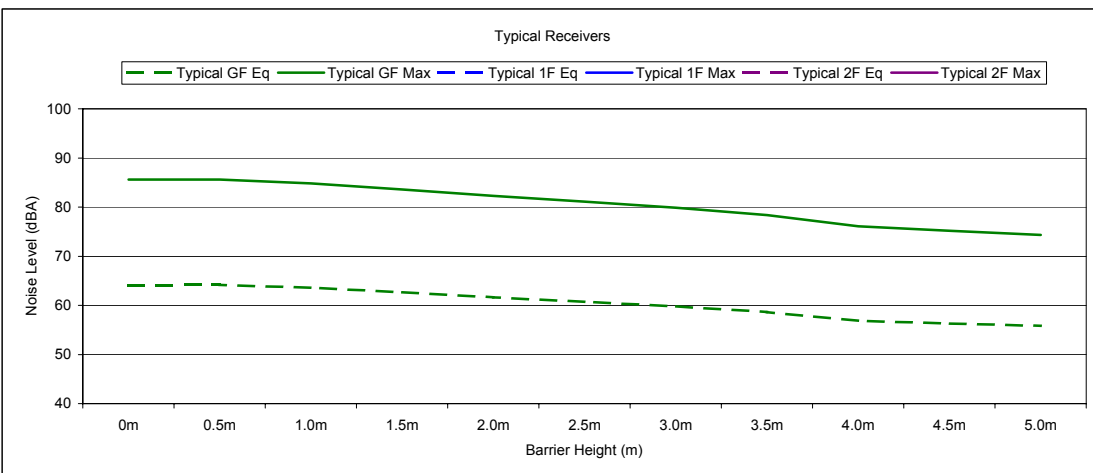
At this locality, the railway line is within cutting. The Barrier heights in the below plots represent the height of the noise wall above the cutting.

A noise barrier at this location is not cost effective as there are no barrier heights for which the TNBA and MBVA values are both above 0.2 dBA per square metre.

A 2.5 m high noise wall would reduce the number of trigger level exceedances from two to zero.



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



Cost-benefit Curves for Noise Barrier Sub-catchment Areas

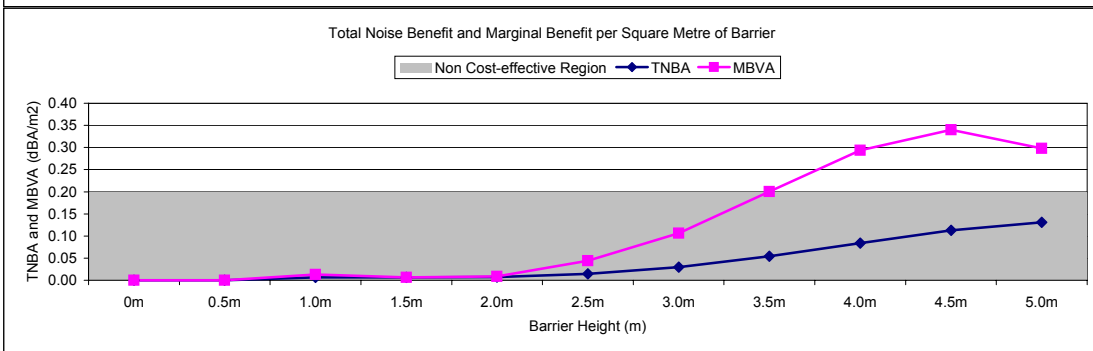
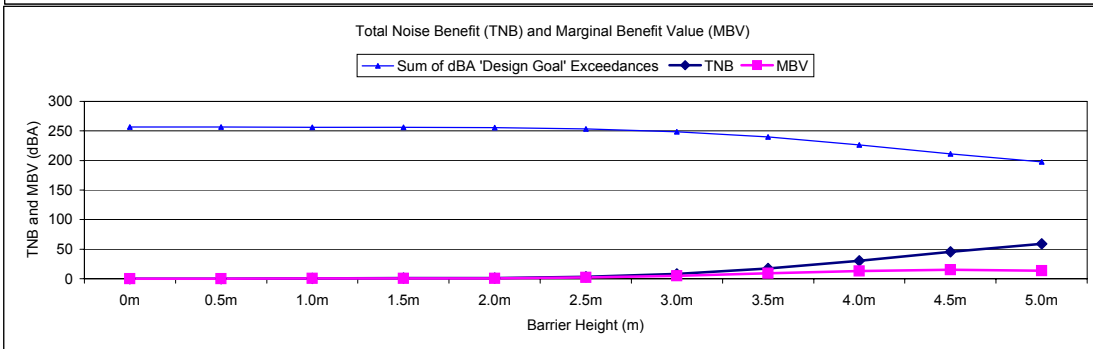
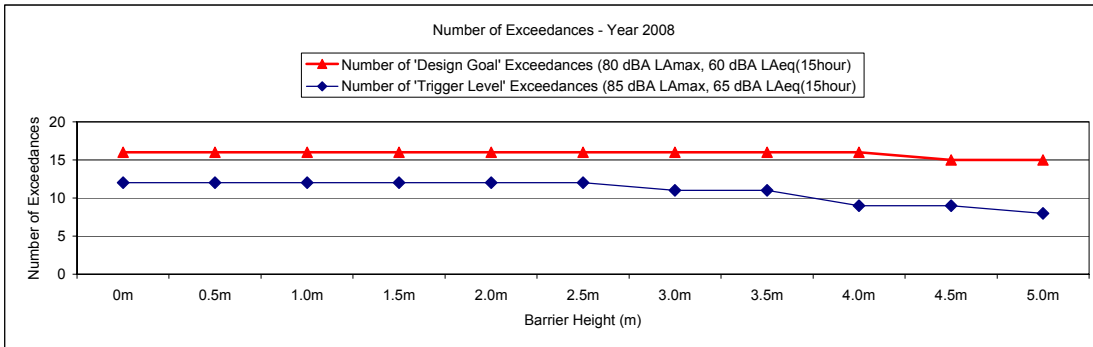
**Sub-catchment Dn-O**

For this sub-catchment, the noise barrier starts at Track Chainage 19.17 km and ends at Track Chainage 19.26 km (90 m)

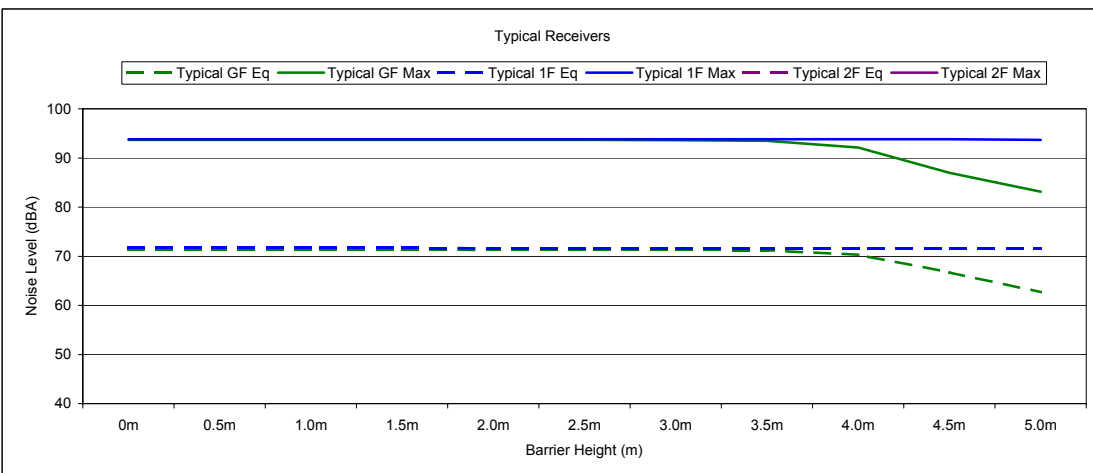
At this locality, the railway line is within cutting. The Barrier heights in the below plots represent the height of the noise wall above the cutting.

A noise barrier at this location is not cost effective as there are no barrier heights for which the TNBA and MBVA values are both above 0.2 dBA per square metre.

A 4.0 m high noise wall would reduce the number of trigger level exceedances from twelve to eight.



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.





Cost-benefit Curves for Noise Barrier Sub-catchment Areas

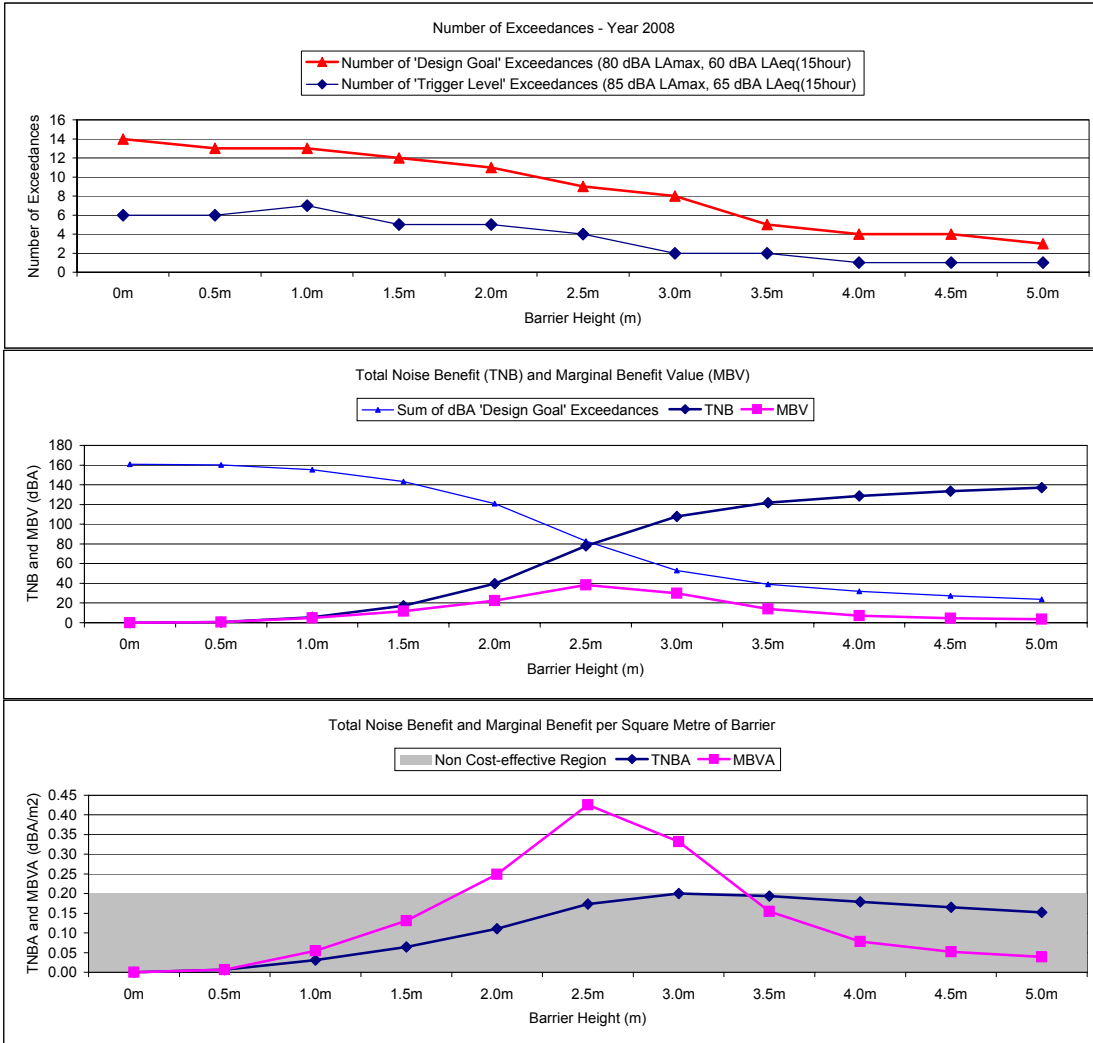
Sub-catchment Dn-P

For this sub-catchment, the noise barrier starts at Track Chainage 19.63 km and ends at Track Chainage 19.81 km (180 m)

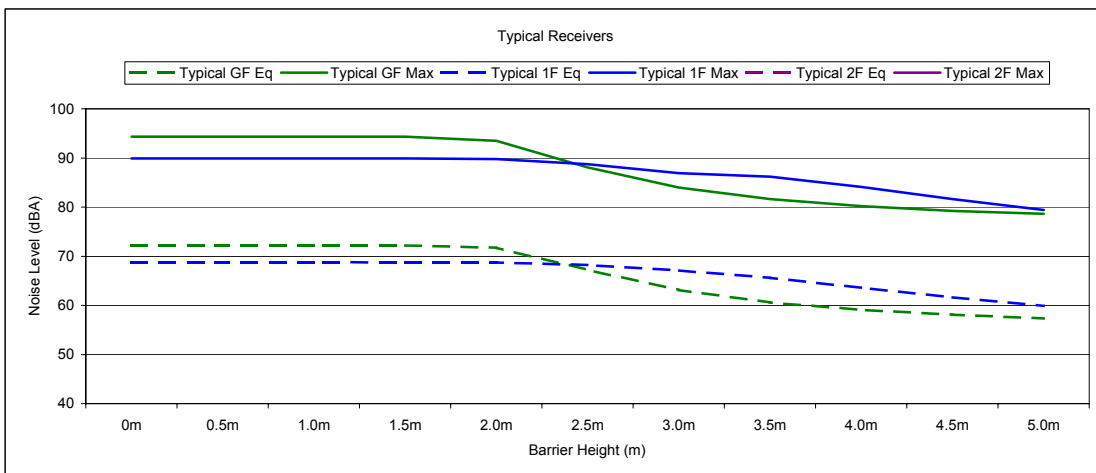
At this locality, the railway line is within cutting at Chainage 19.46 km, on embankment at Chainage 19.58 km and within cutting again at Chainage 19.76 km. The Barrier heights in the below plots represent the height of the noise wall above the cutting and the height of the noise wall above the Top of Rail (TOR) at the embankment location between Chainage 19.58 km and 19.76 km.

A noise barrier at this location is not cost effective as there are no barrier heights for which the TNBA and MBVA values are both above 0.2 dBA per square metre.

A 3.0 m high noise wall would reduce the number of triaqaer level exceedances from six to two.



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



Cost-benefit Curves for Noise Barrier Sub-catchment Areas

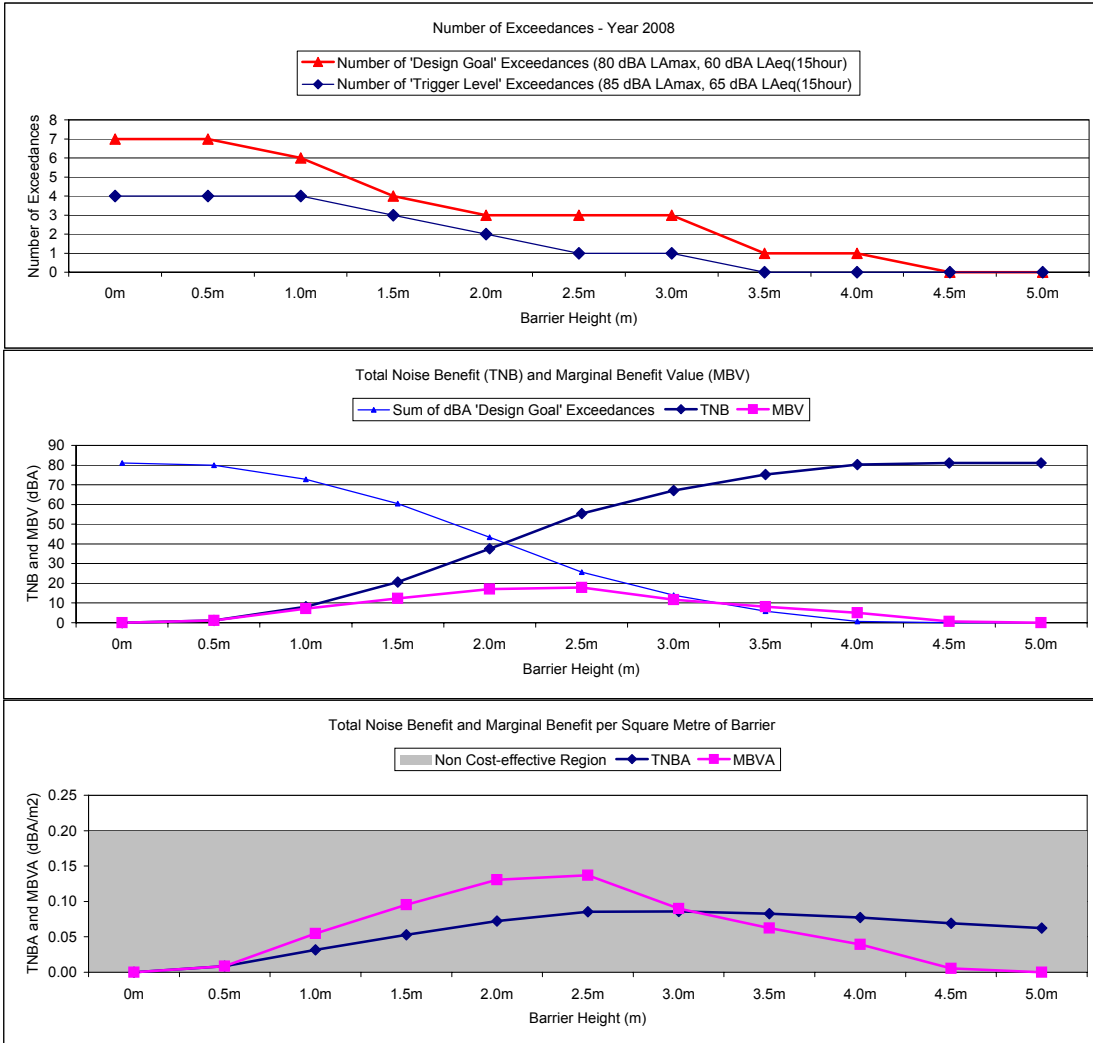
Sub-catchment Dn-Q

For this sub-catchment, the noise barrier starts at Track Chainage 19.99 km and ends at Track Chainage 20.25 km (260 m)

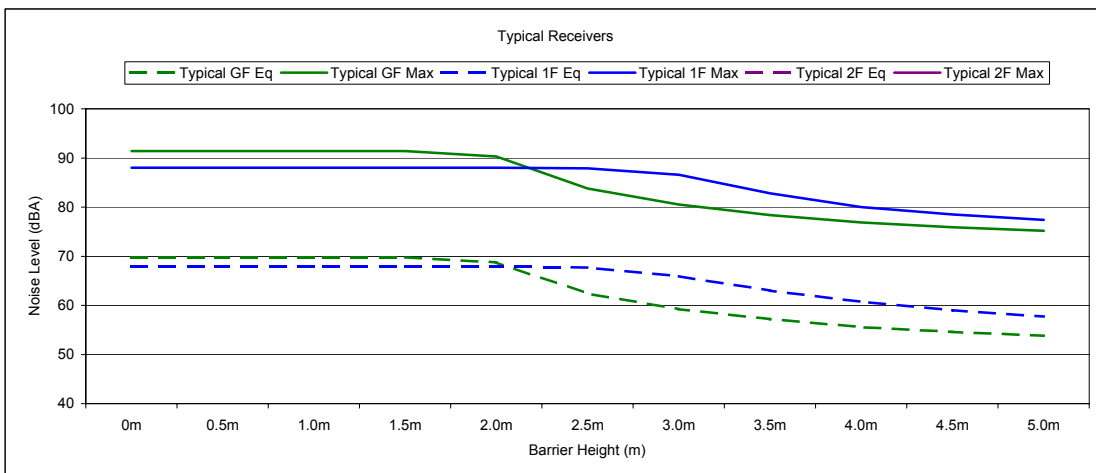
At this locality, the railway line is within cutting at Chainage 19.88 km and on embankment at Chainage 20.17 km. The Barrier heights in the below plots represent the height of the noise wall above the cutting and the height of the noise wall above the Top of Rail (TOR) at the embankment location after Chainage 20.17 km.

A noise barrier at this location is not cost effective as there are no barrier heights for which the TNBA and MBVA values are both above 0.2 dBA per square metre.

A 3.5 m high noise wall would reduce the number of triaqaer level exceedances from four to zero.



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



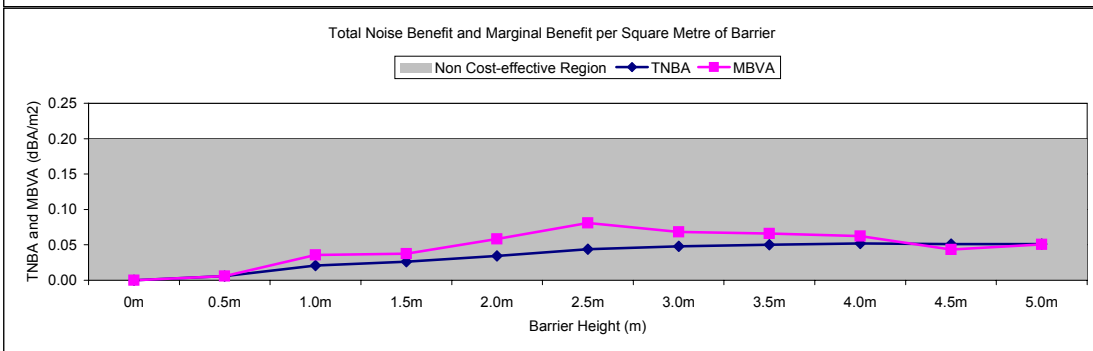
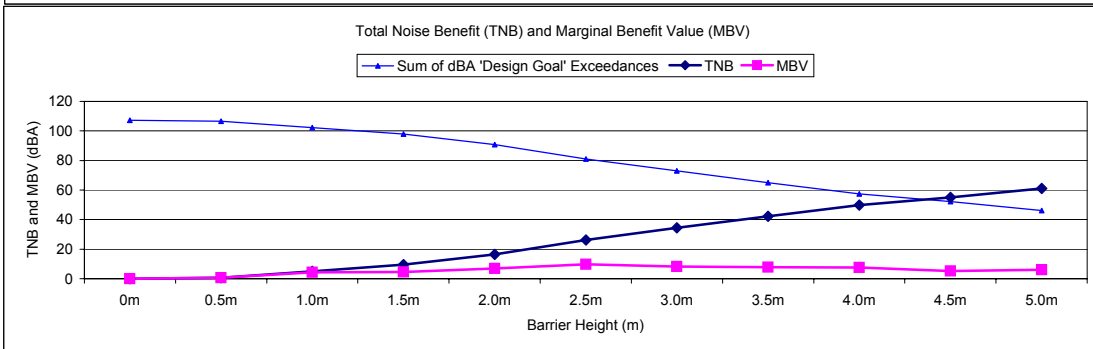
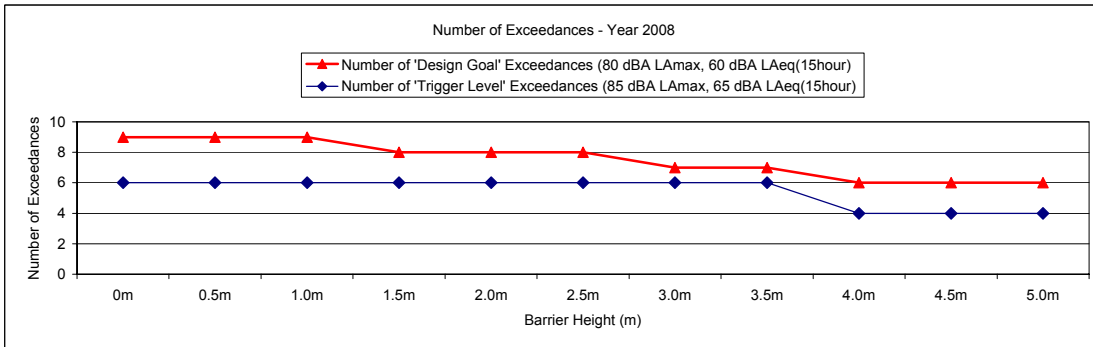
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

**Sub-catchment Up-B**

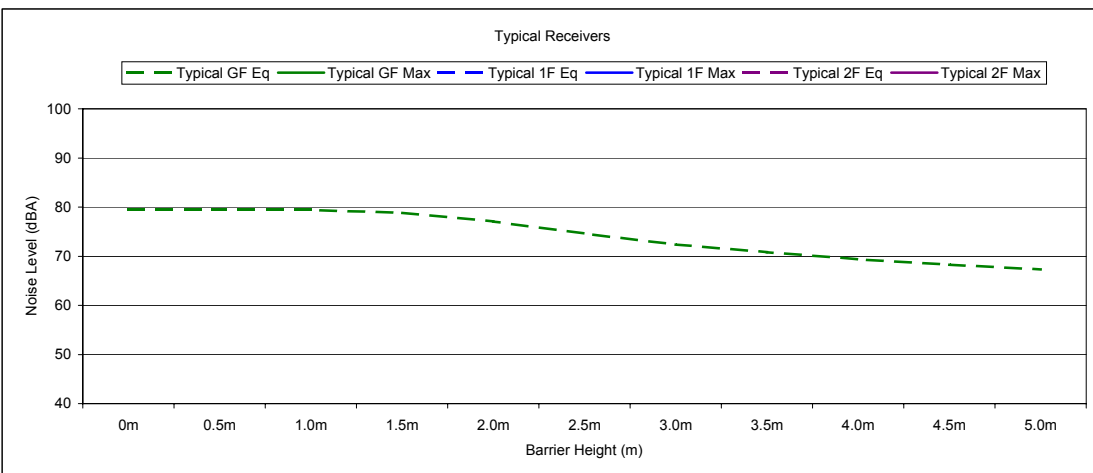
For this sub-catchment, the noise barrier starts at Track Chainage 14.73 km and ends at Track Chainage 14.97 km (240 m)

At this locality, the railway line is within cutting. The Barrier heights in the below plots represent the height of the noise wall above the cutting.

The selected barrier height at this location is 3.5 m high, resulting in an overall barrier height of 3.5 m (above the top of the cutting).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



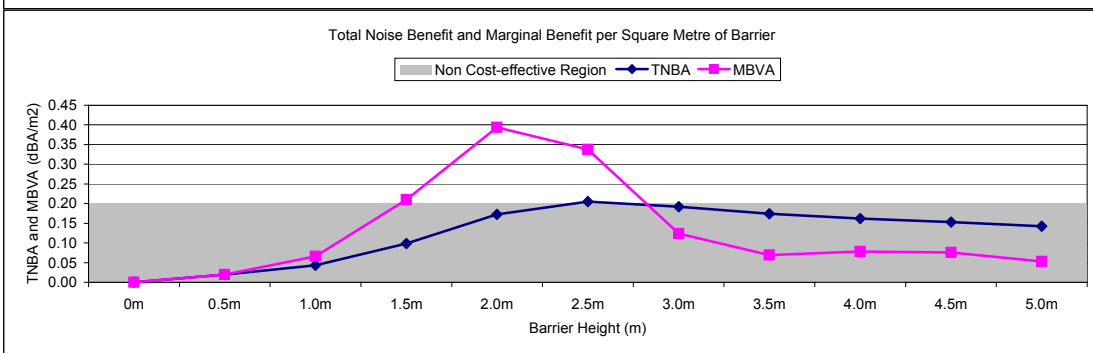
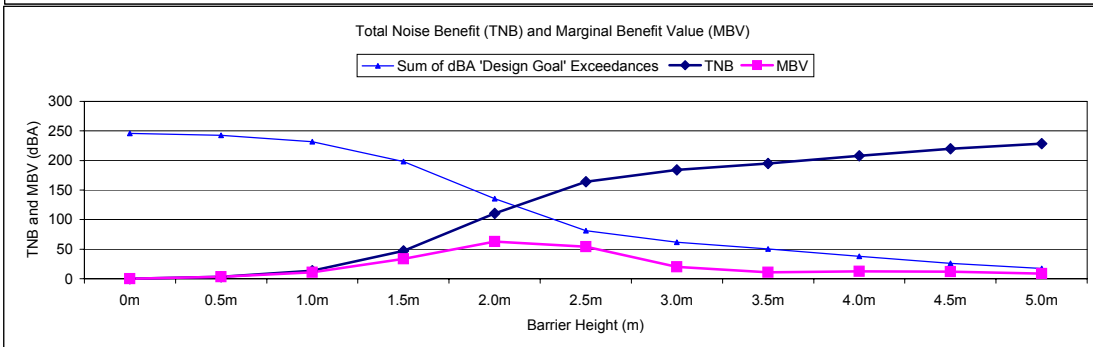
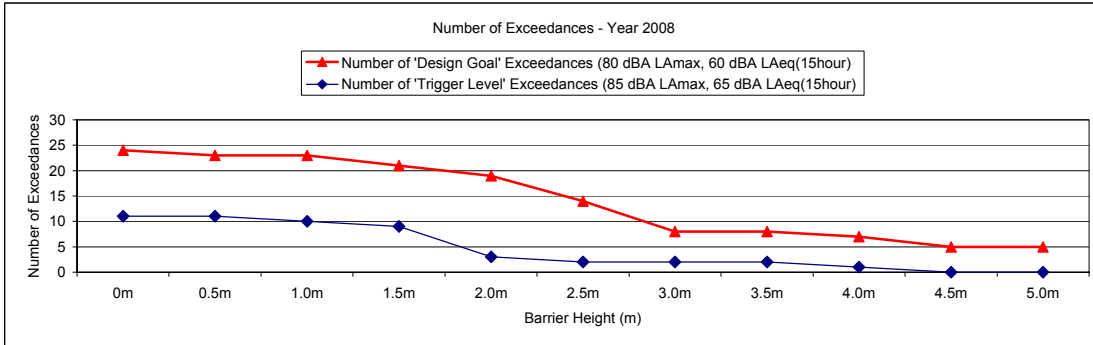
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

**Sub-catchment Up-C**

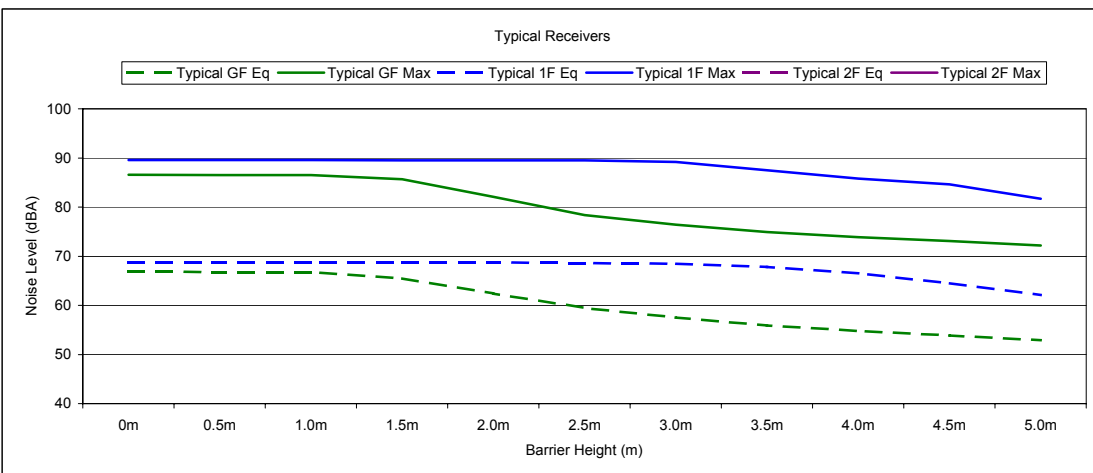
For this sub-catchment, the noise barrier starts at Track Chainage 14.97 km and ends at Track Chainage 15.29 km (320 m)

At this locality, the railway line is within cutting. The Barrier heights in the below plots represent the height of the noise wall above the cutting.

The selected barrier height at this location is 2.5 m high, resulting in an overall barrier height of 2.5 m (above the top of the cutting).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



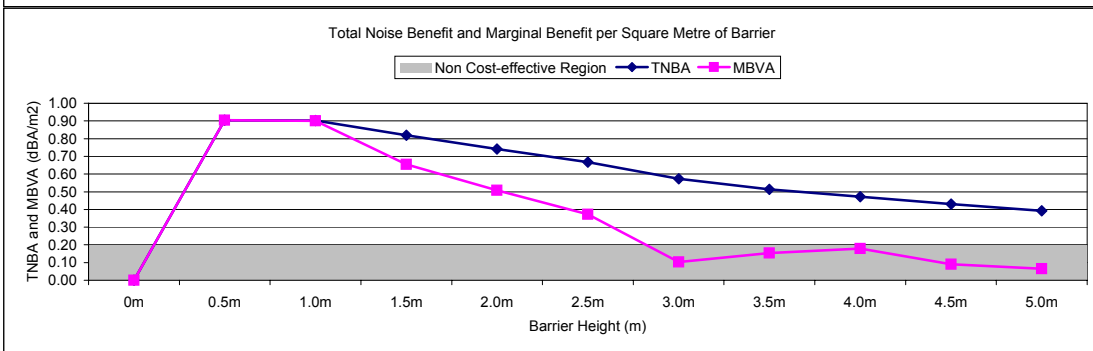
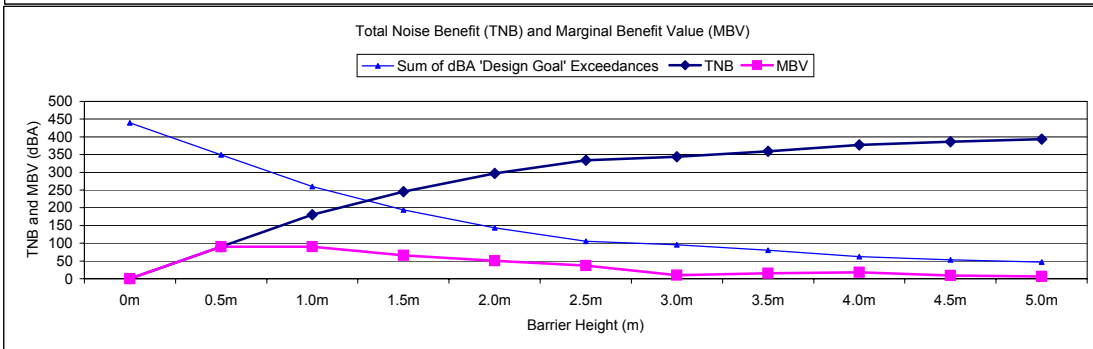
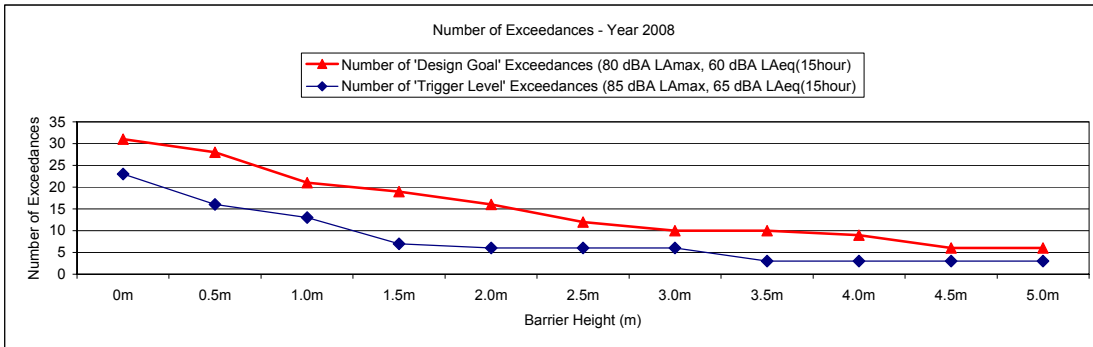
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

**Sub-catchment Up-D**

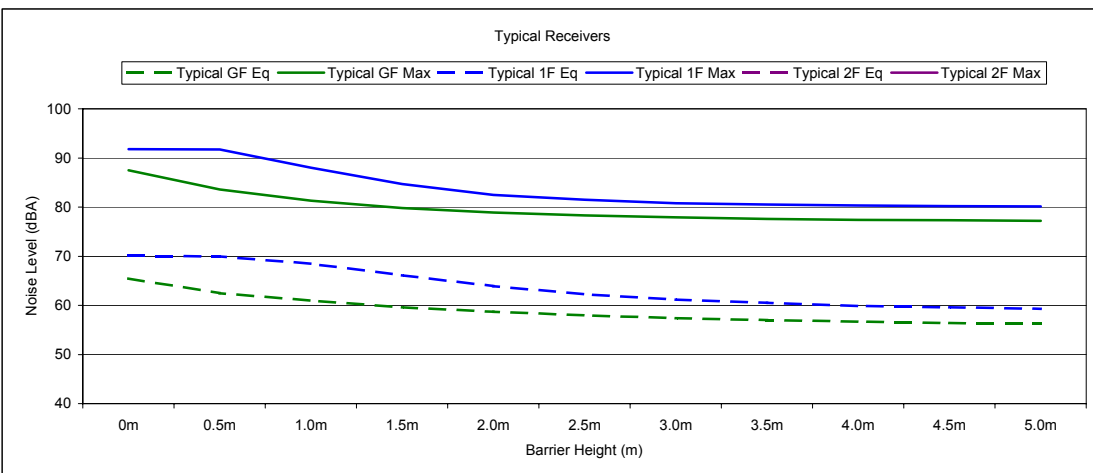
For this sub-catchment, the noise barrier starts at Track Chainage 15.38 km and ends at Track Chainage 15.58 km (200 m)

At this locality, the railway line is on embankment. The Barrier heights in the below plots represent the height of the noise wall above the Top of Rail (TOR).

The selected barrier height at this location is 3.5 m high (above TOR), resulting in an overall barrier height of approximately 4.5 m (above the retaining wall).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



Cost-benefit Curves for Noise Barrier Sub-catchment Areas

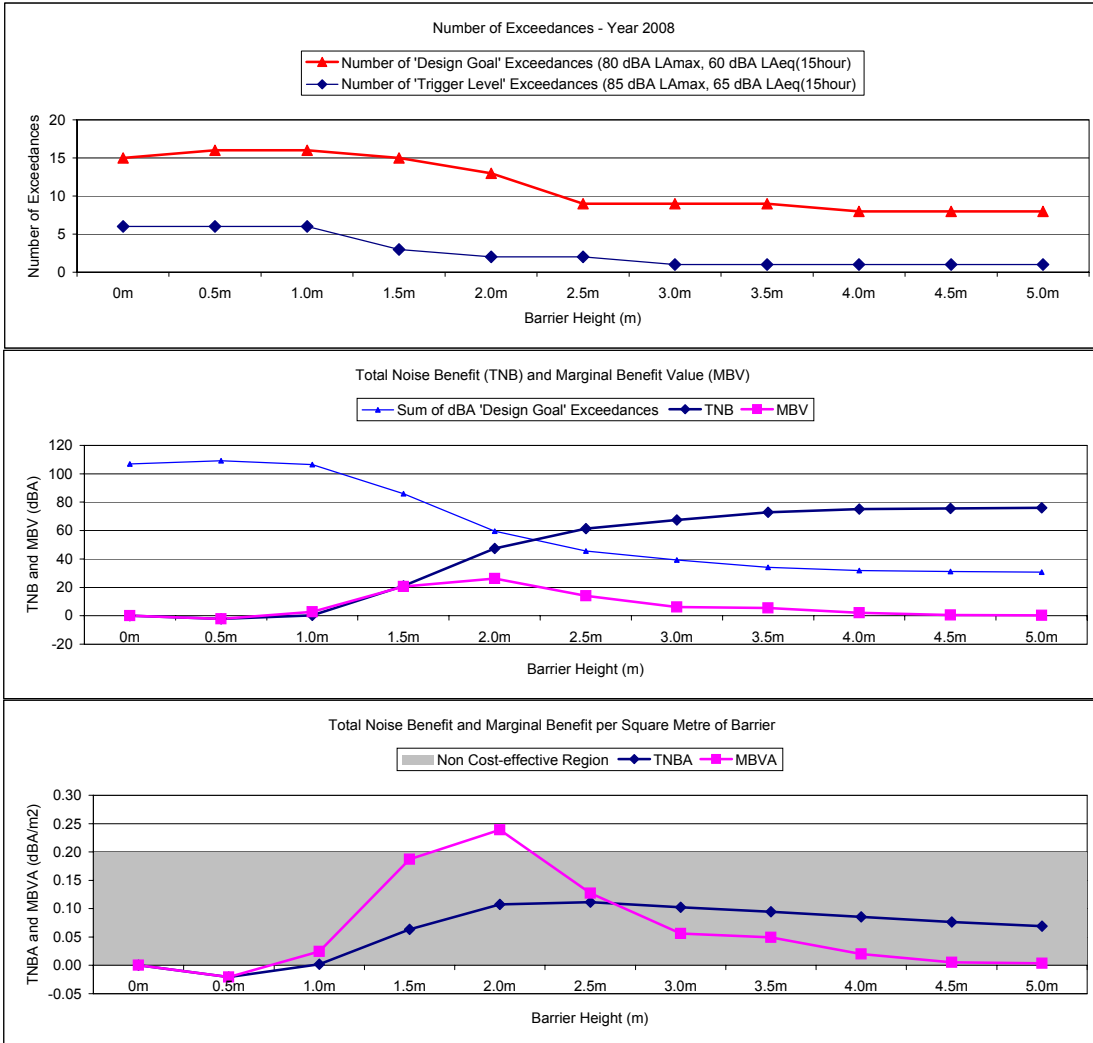
**Sub-catchment Up-F**

For this sub-catchment, the noise barrier starts at Track Chainage 16.13 km and ends at Track Chainage 16.35 km (220 m)

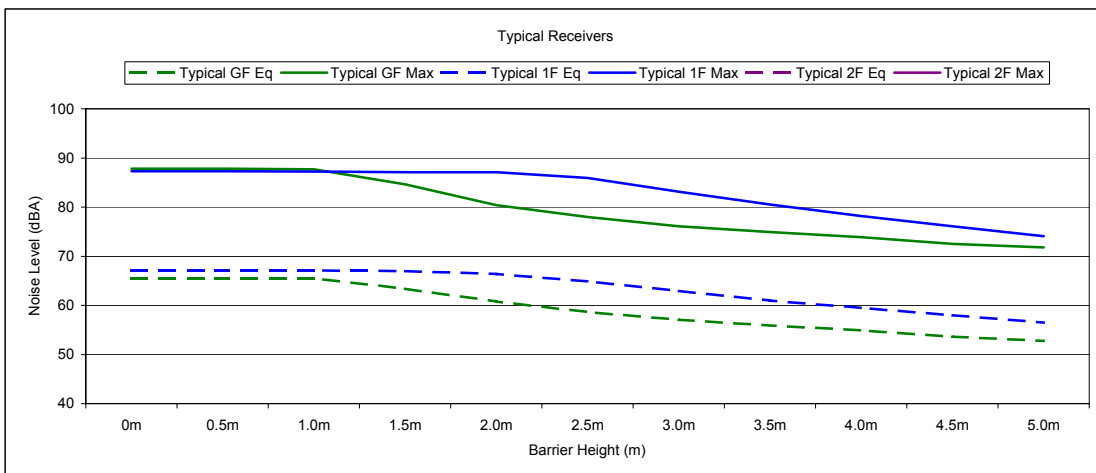
At this locality, the railway line is on embankment at Chainage 15.97 km and in cutting at Chainage 16.14 km. The Barrier heights in the below plots represent the height of the noise wall above the Top of Rail (TOR) at the embankment location and the height of the noise wall above cutting after Chainage 16.14 km.

A noise barrier at this location is not cost effective as there are no barrier heights for which the TNBA and MBVA values are both above 0.2 dBA per square metre.

A 3.0 m high noise wall would reduce the number of triaqaer level exceedances from six to one.



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



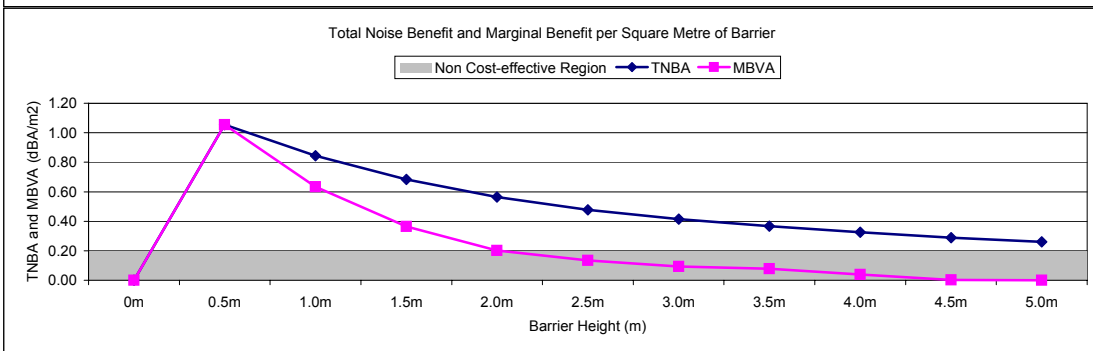
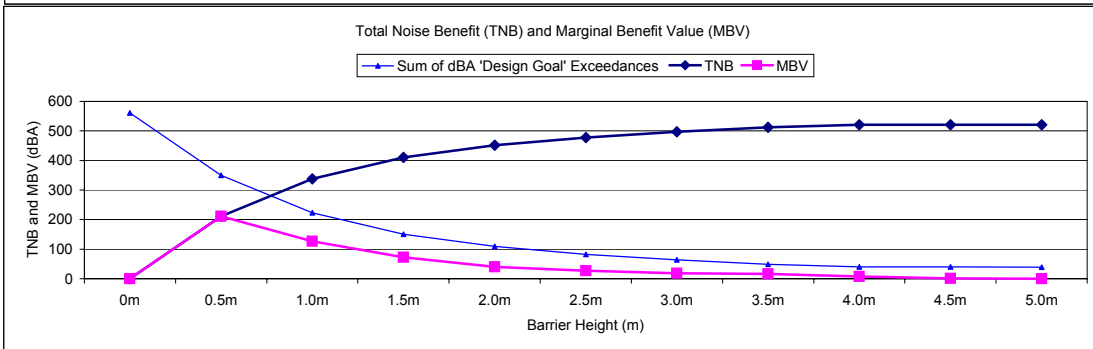
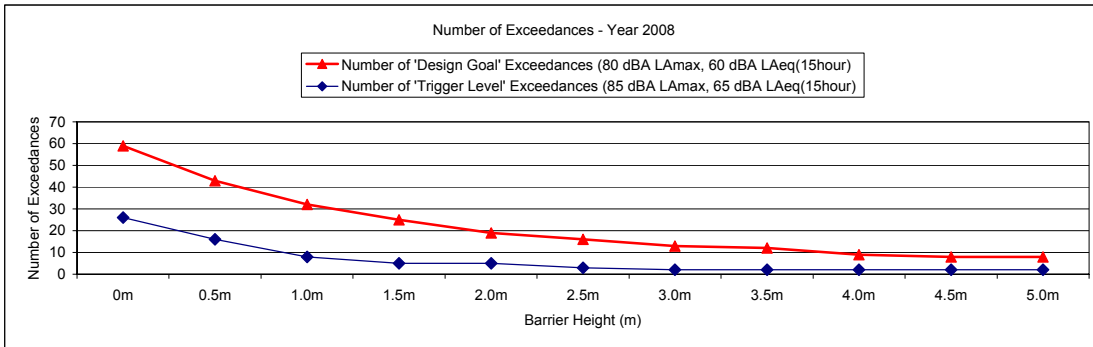
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

Sub-catchment Up-G

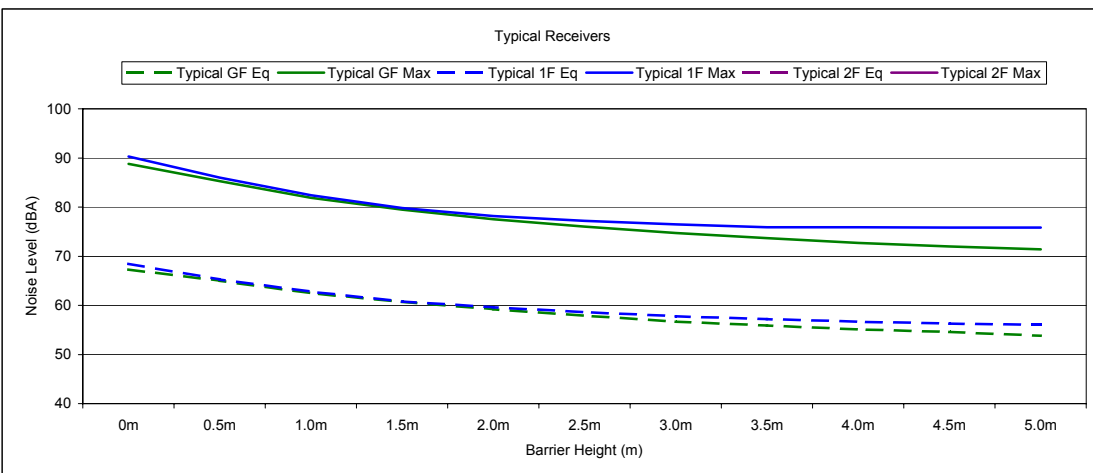
For this sub-catchment, the noise barrier starts at Track Chainage 16.35 km and ends at Track Chainage 16.75 km (400 m)

At this locality, the railway line is within cutting at Chainage 16.35 km and on embankment at Chainage 16.48 km. The Barrier heights in the below plots represent the height of the noise wall above the cutting and the height of the noise wall above the Top of Rail (TOR) at the embankment location after Chainage 16.48 km.

The selected barrier height at this location is 3.0 m high, resulting in an overall barrier height of 3.0 m at the top of the cutting and approximately 4.0 m high (above the retaining wall).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



Cost-benefit Curves for Noise Barrier Sub-catchment Areas

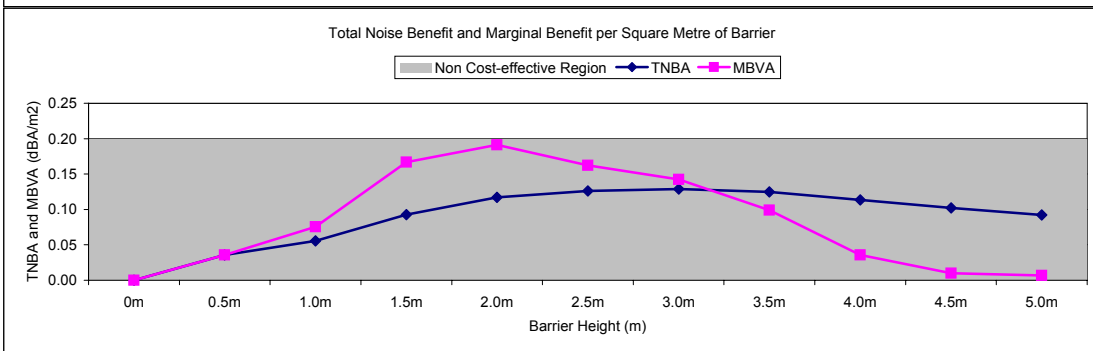
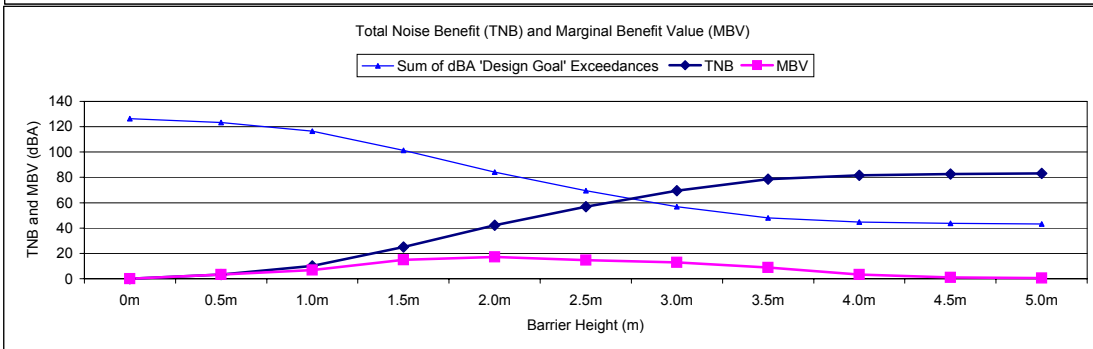
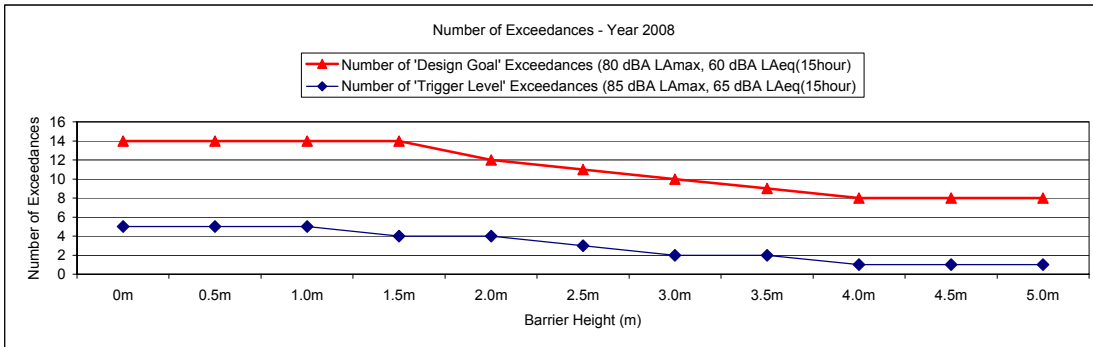
**Sub-catchment Up-H**

For this sub-catchment, the noise barrier starts at Track Chainage 16.93 km and ends at Track Chainage 17.11 km (180 m)

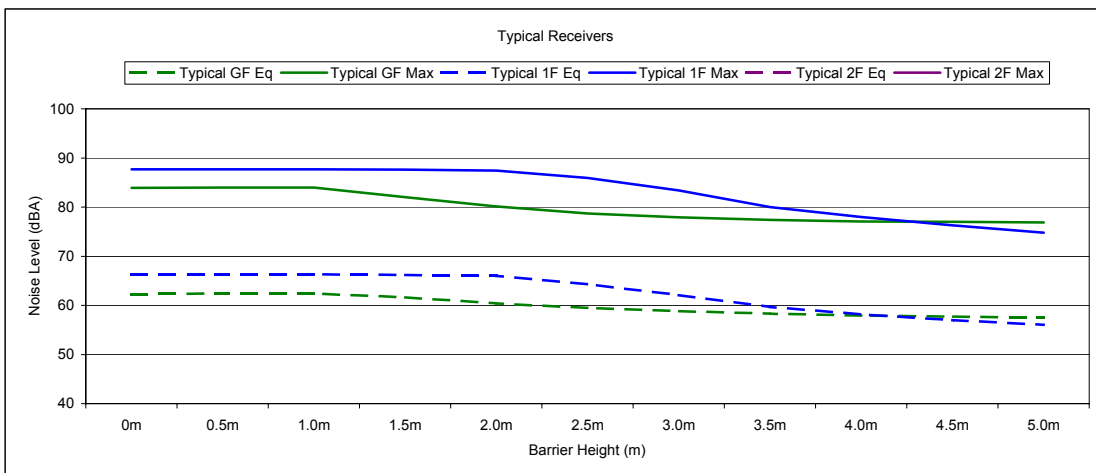
At this locality, the railway line is on embankment at Chainage 16.80 km and in cutting at Chainage 16.97 km. The Barrier heights in the below plots represent the height of the noise wall above the Top of Rail (TOR) at the embankment location and the height of the noise wall above cutting after Chainage 16.97 km.

A noise barrier at this location is not cost effective as there are no barrier heights for which the TNBA and MBVA values are both above 0.2 dBA per square metre.

A 3.5 m high noise wall would reduce the number of triaqaer level exceedances from five to two.



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.





Cost-benefit Curves for Noise Barrier Sub-catchment Areas

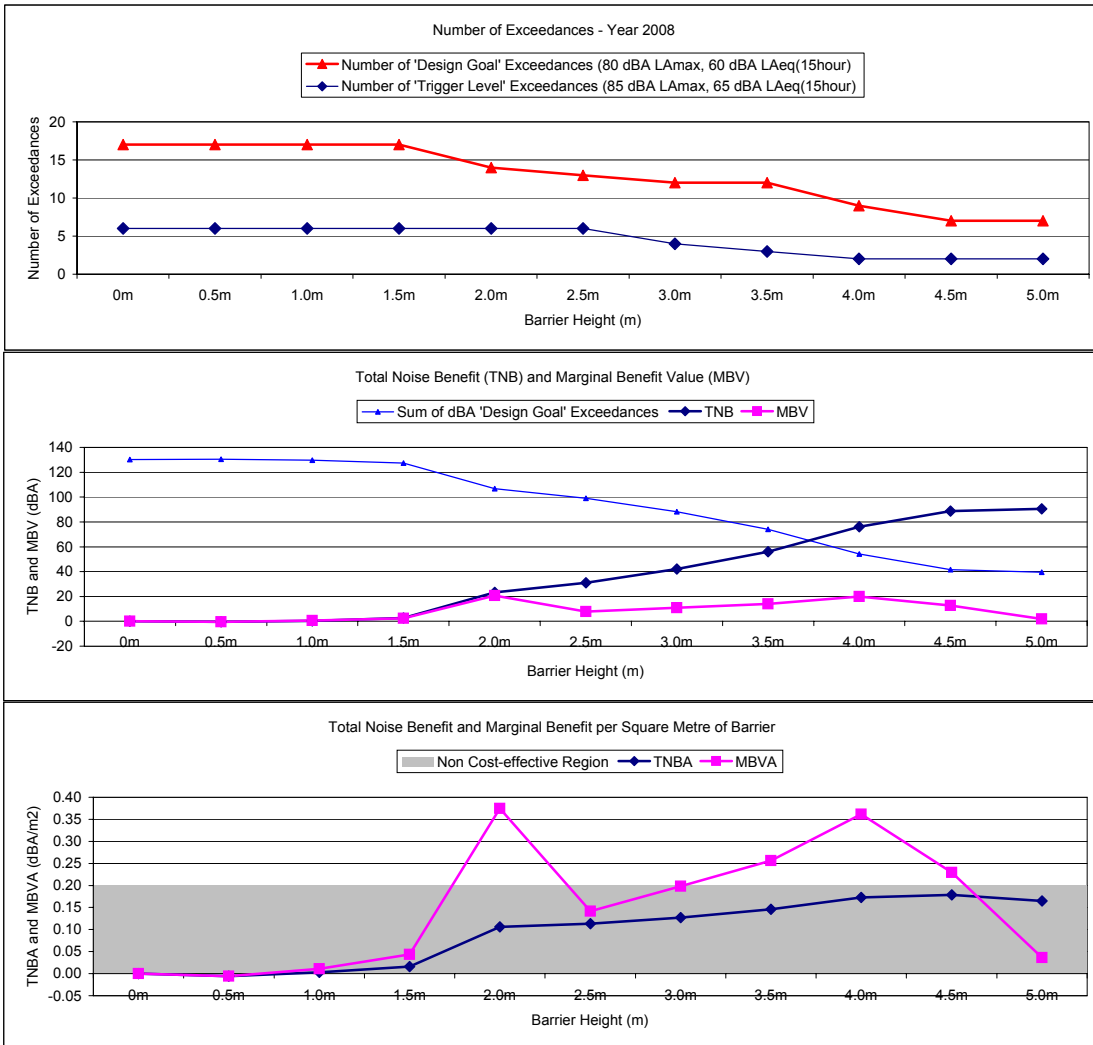
**Sub-catchment Up-1**

For this sub-catchment, the noise barrier starts at Track Chainage 17.29 km and ends at Track Chainage 17.4 km (110 m)

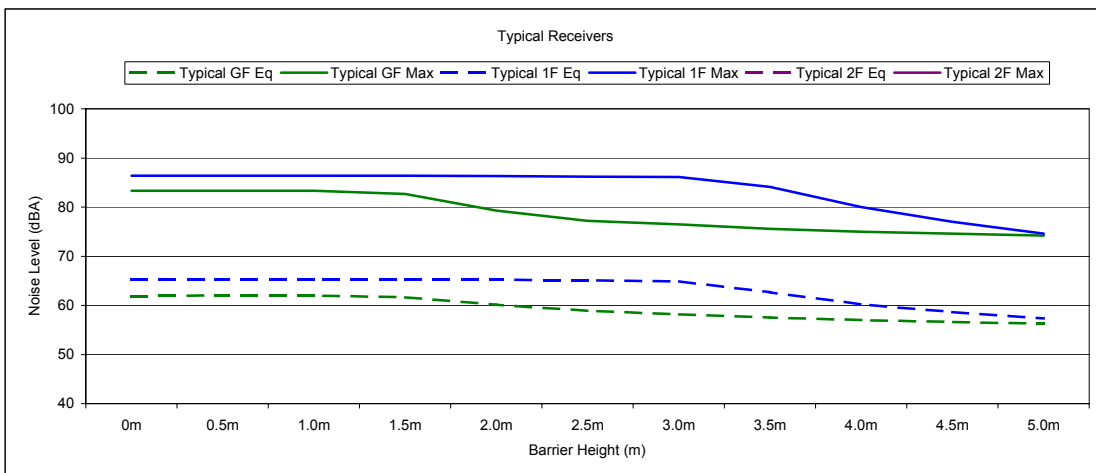
At this locality, the railway line is within cutting. The Barrier heights in the below plots represent the height of the noise wall above the cutting.

A noise barrier at this location is not cost effective as there are no barrier heights for which the TNBA and MBVA values are both above 0.2 dBA per square metre.

A 4.0 m high noise wall would reduce the number of trigger level exceedances from six to two.



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



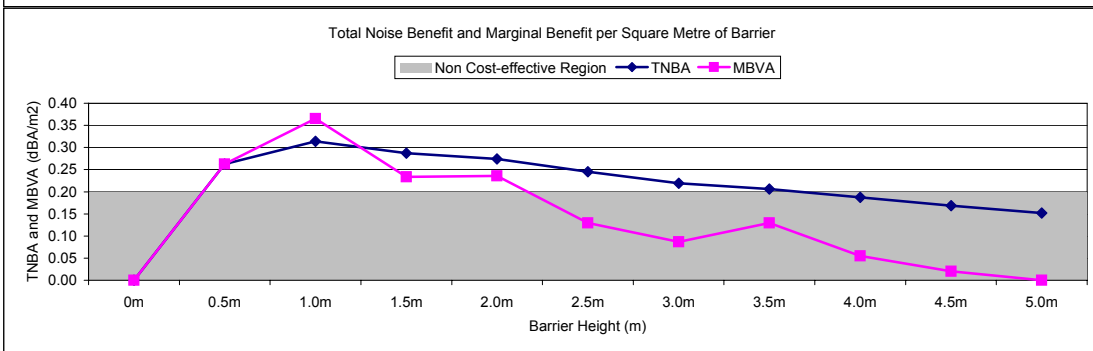
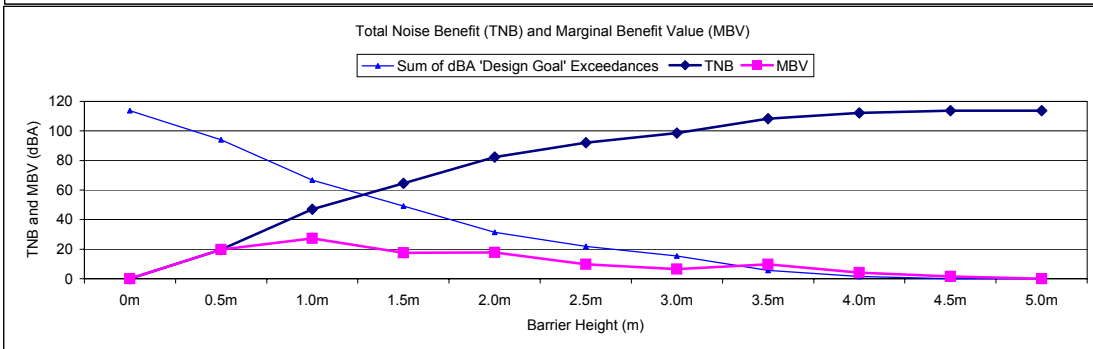
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

Sub-catchment Up-J

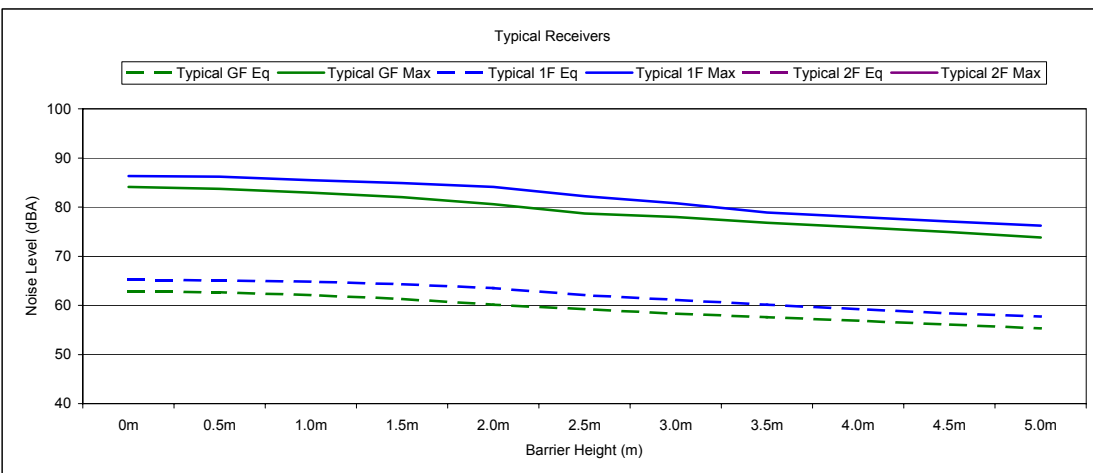
For this sub-catchment, the noise barrier starts at Track Chainage 17.5 km and ends at Track Chainage 17.65 km (150 m)

At this locality, the railway line is within cutting at Chainage 17.40 km and on embankment at Chainage 17.59 km. The Barrier heights in the below plots represent the height of the noise wall above the cutting and the height of the noise wall above the Top of Rail (TOR) at the embankment location after Chainage 17.59 km.

The selected barrier height at this location is 2.0 m high, resulting in an overall barrier height of 2.0 m at the top of the cutting and approximately 3.0 m high (above the retaining wall).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



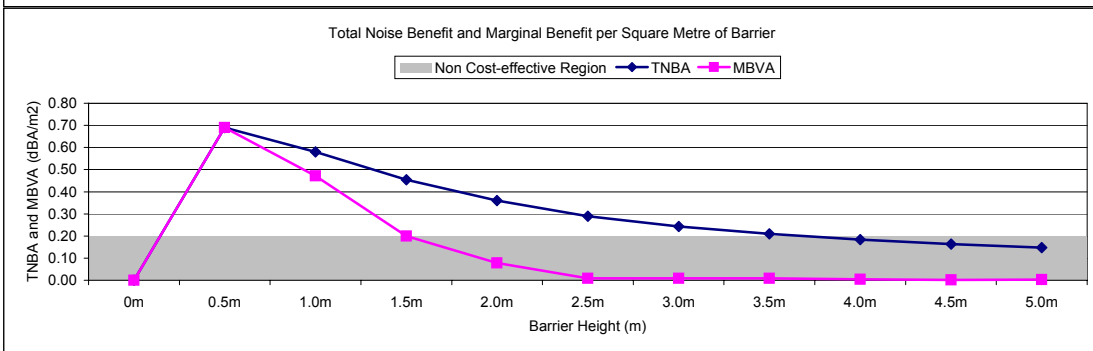
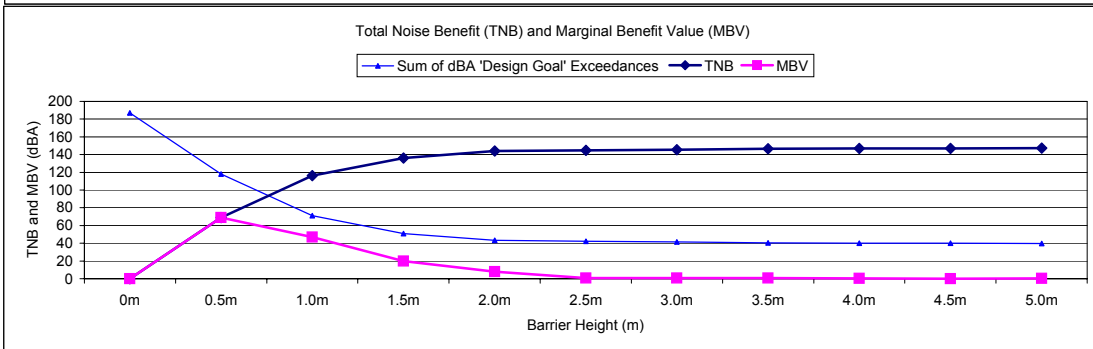
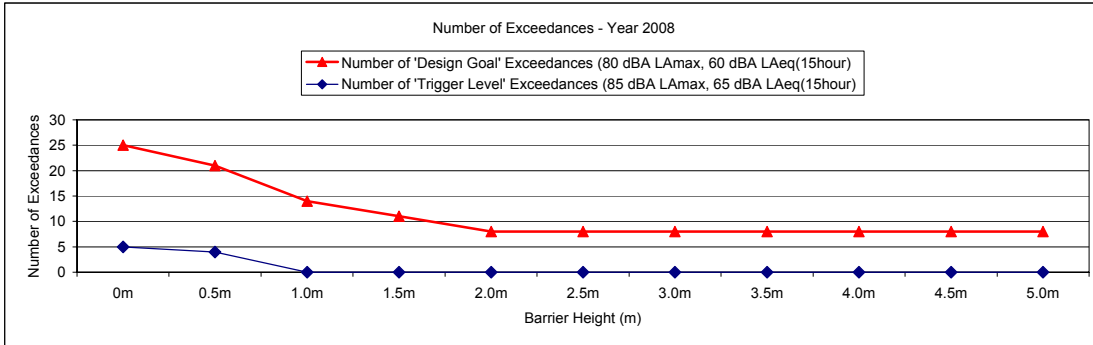
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

**Sub-catchment Up-K**

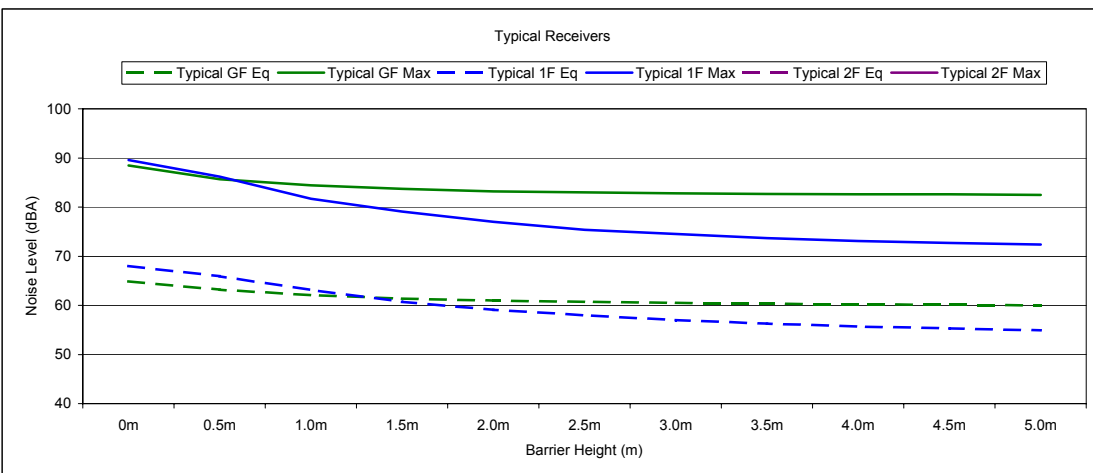
For this sub-catchment, the noise barrier starts at Track Chainage 17.65 km and ends at Track Chainage 17.85 km (200 m)

At this locality, the railway line is on embankment. The Barrier heights in the below plots represent the height of the noise wall above the Top of Rail (TOR).

The selected barrier height at this location is 1.0 m high (above TOR), resulting in an overall barrier height of approximately 2.0 m (above the retaining wall).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



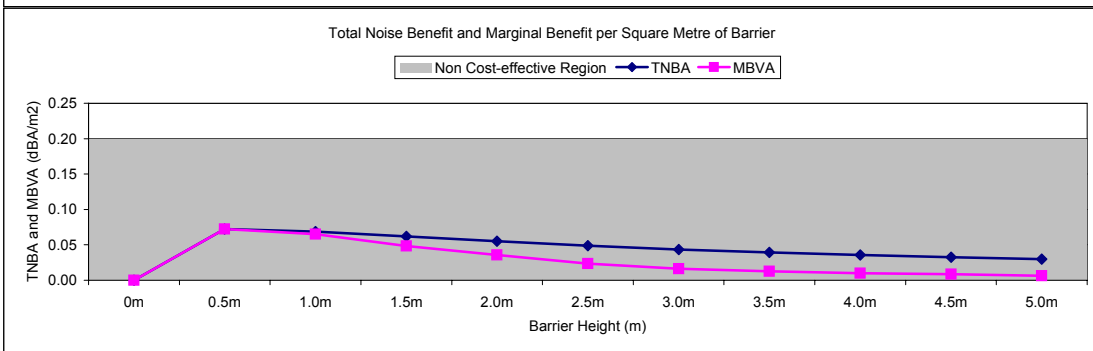
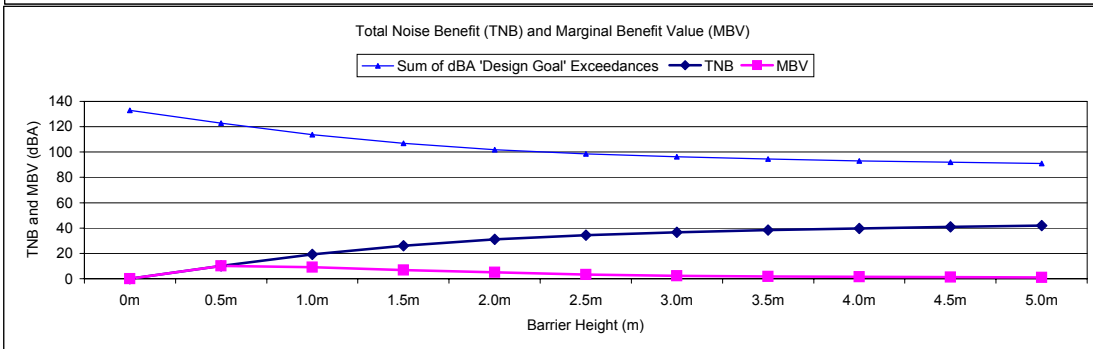
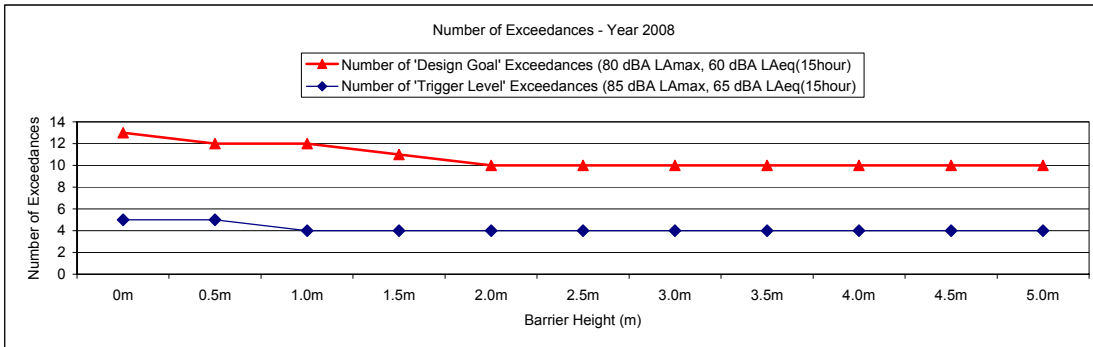
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

**Sub-catchment Up-L**

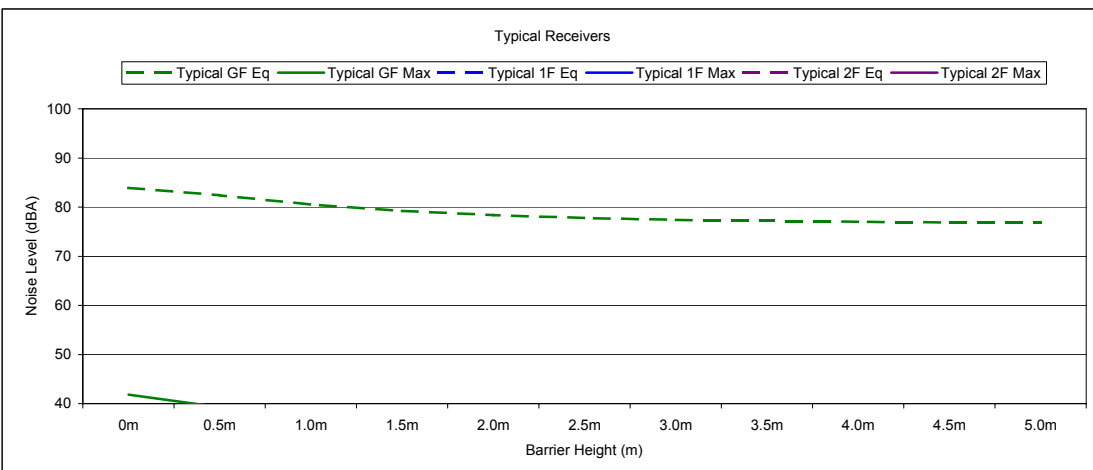
For this sub-catchment, the noise barrier starts at Track Chainage 18.07 km and ends at Track Chainage 18.35 km (280 m)

At this locality, the railway line is within cutting at Chainage 17.96 km and on embankment at Chainage 18.24 km. The Barrier heights in the below plots represent the height of the noise wall above the cutting and the height of the noise wall above the Top of Rail (TOR) at the embankment location after Chainage 18.24 km.

The selected barrier height at this location is 2.5 m high, resulting in an overall barrier height of 2.5 m at the top of the cutting and approximately 3.5 m high (above the retaining wall) at the embankment location.



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



Cost-benefit Curves for Noise Barrier Sub-catchment Areas

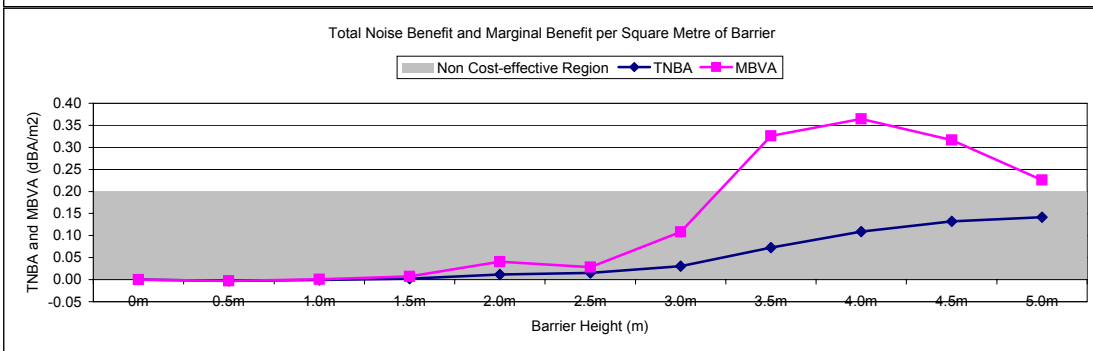
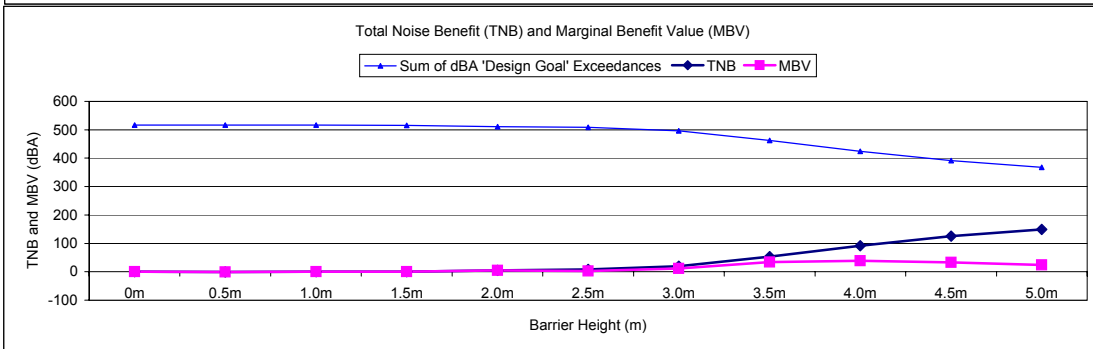
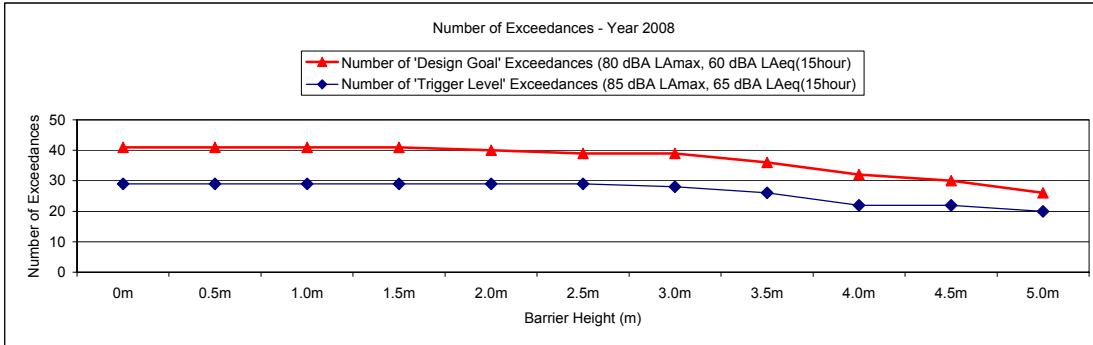
**Sub-catchment Up-N**

For this sub-catchment, the noise barrier starts at Track Chainage 18.79 km and ends at Track Chainage 19 km (210 m)

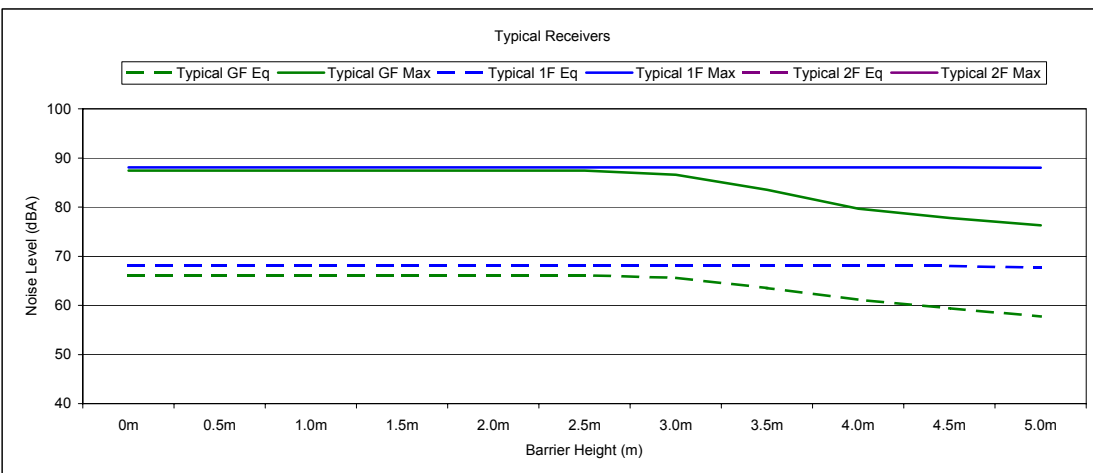
At this locality, the railway line is within cutting. The Barrier heights in the below plots represent the height of the noise wall above the cutting.

A noise barrier at this location is not cost effective as there are no barrier heights for which the TNBA and MBVA values are both above 0.2 dBA per square metre.

A 4.0 m high noise wall would reduce the number of trigger level exceedances from twenty nine to twenty two.



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



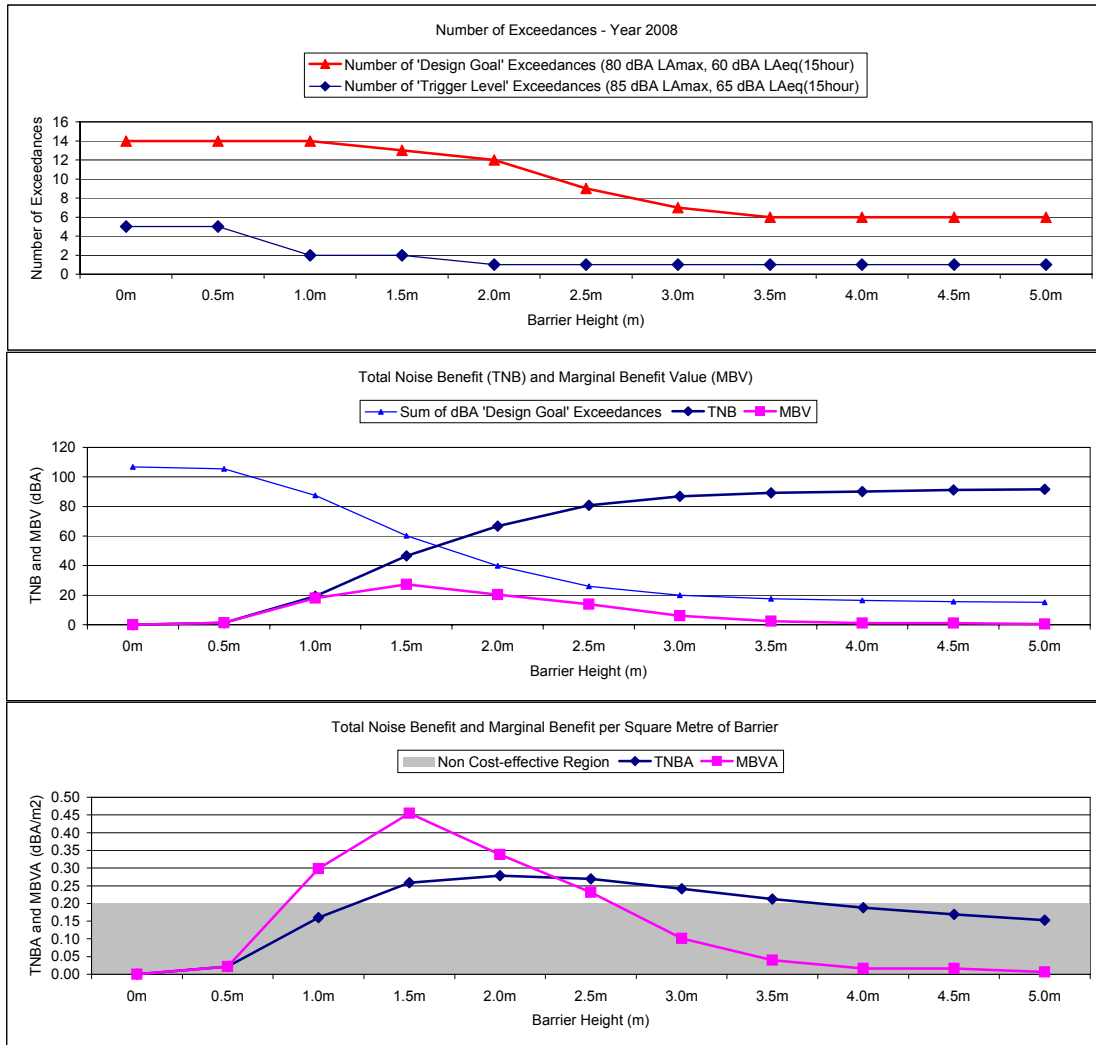
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

Sub-catchment Up-O

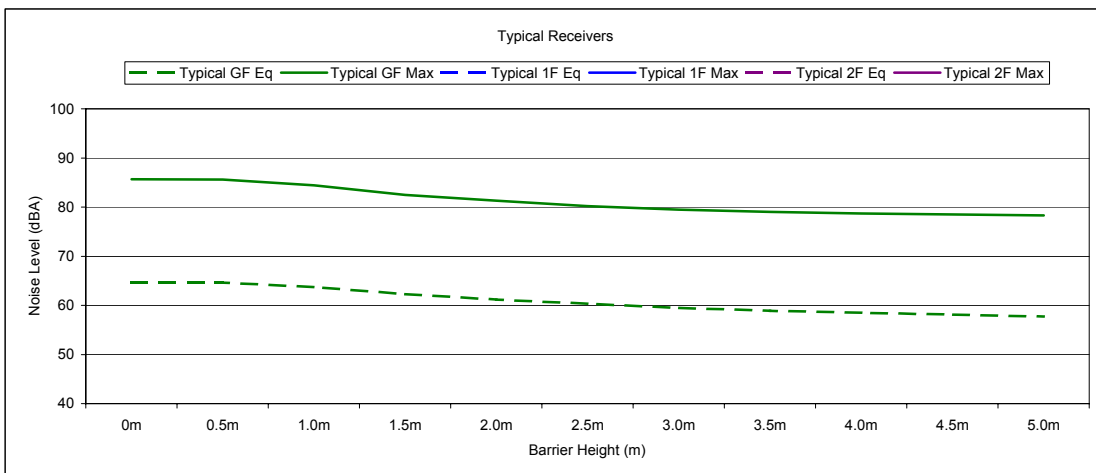
For this sub-catchment, the noise barrier starts at Track Chainage 19.13 km and ends at Track Chainage 19.25 km (120 m)

AA at this locality, the railway line is within cutting at Chainage 19.09 km, on embankment at Chainage 19.14 km and within cutting again at Chainage 19.26. The Barrier heights in the below plots represent the height of the noise wall above the Top of Rail (TOR) at the embankment location between Chainage 19.14 km and 19.26 km.

The selected barrier height at this location is 2.5 m high, resulting in an overall barrier height of 3.5 m high (above the retaining wall).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



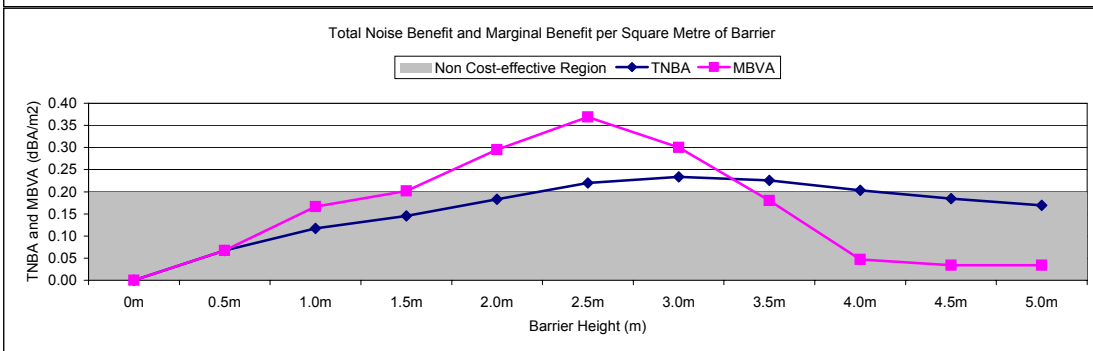
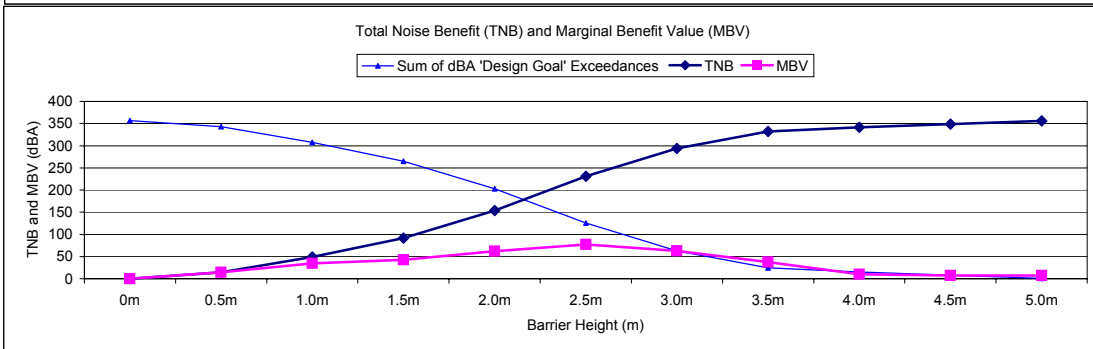
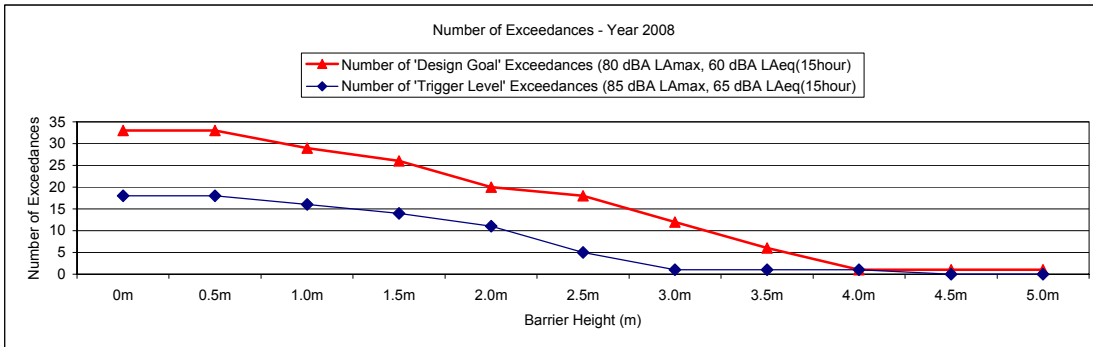
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

Sub-catchment Up-P

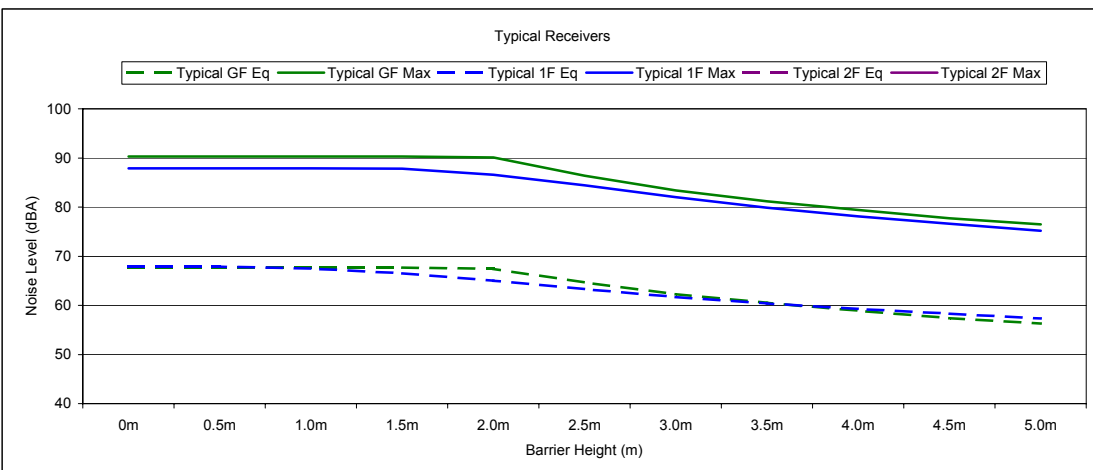
For this sub-catchment, the noise barrier starts at Track Chainage 19.46 km and ends at Track Chainage 19.88 km (420 m)

AA at this locality, the railway line is within cutting at Chainage 19.46 km, on embankment at Chainage 19.56 km and within cutting again at Chainage 19.79. The Barrier heights in the below plots represent the height of the noise wall above the cutting and the height of the noise wall above the Top of Rail (TOR) at the embankment location between Chainage 19.56 km and 19.79 km.

The selected barrier height at this location is 3.0 m high, resulting in an overall barrier height of 3.0 m at the top of the cutting and approximately 4.0 m high (above the retaining wall).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.



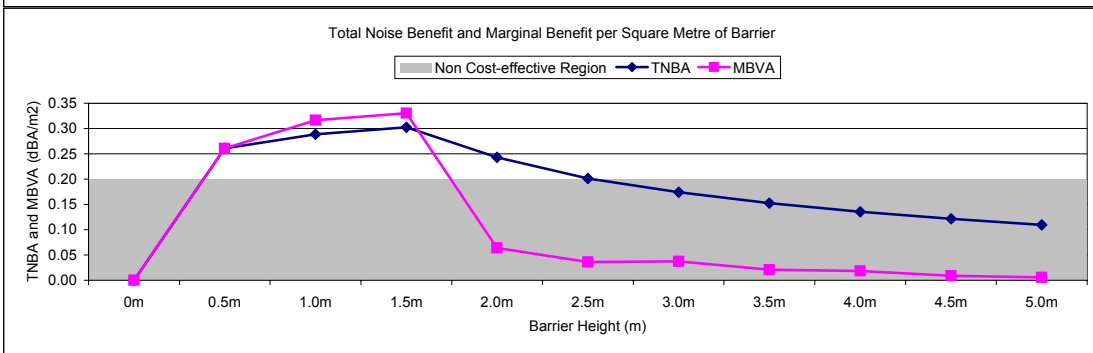
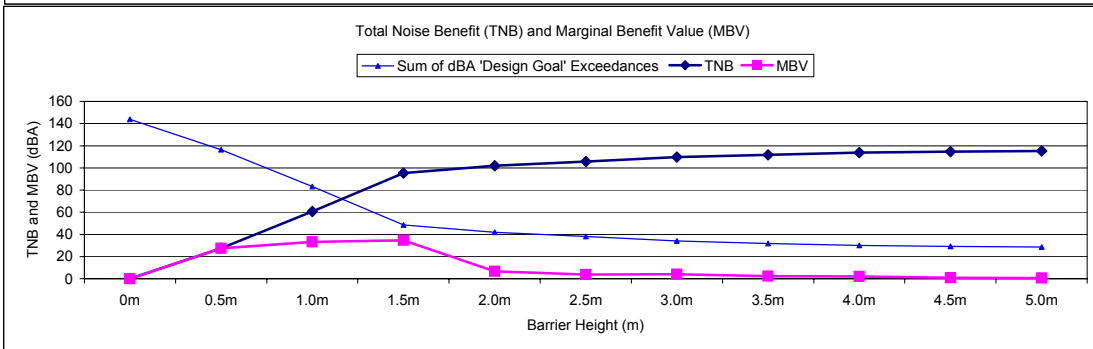
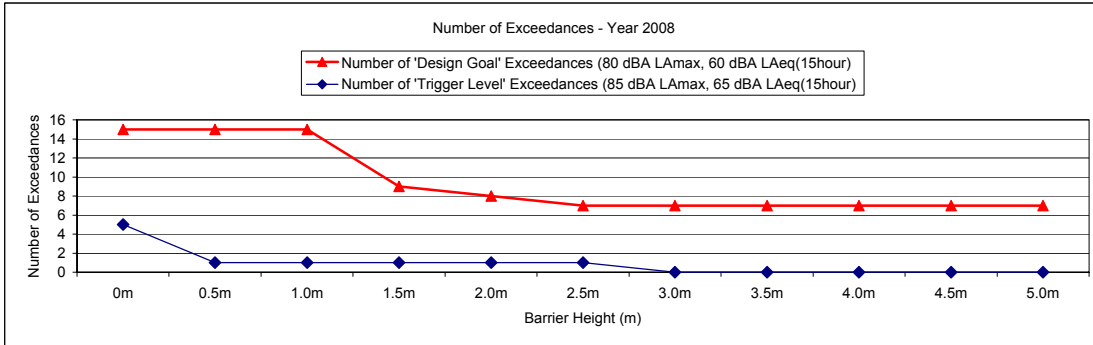
Cost-benefit Curves for Noise Barrier Sub-catchment Areas

**Sub-catchment Up-R**

For this sub-catchment, the noise barrier starts at Track Chainage 20.26 km and ends at Track Chainage 20.47 km (210 m)

At this locality, the railway line is on embankment. The Barrier heights in the below plots represent the height of the noise wall above the Top of Rail (TOR).

The selected barrier height at this location is 1.5 m high (above TOR), resulting in an overall barrier height of approximately 2.5 m (above the retaining wall).



Notes: Both of the TNBA and MBVA Curves must be above the Non Cost-effective Region for the Noise Barrier to be cost effective.

