Exeter City Council:
Cycle Track Construction

Exeter City Council approached SMR Ltd in regard to the repair of their cycle track located off Sannerville Way, Exminster. The cycle track is primarily used as a cycling and walking route for a local school and is occasionally used by cars and tractors. The cycle track had the following dimensions:

Length	=	950 meters
Width	=	3.3 meters
Depth	=	225mm
Total Volume	=	705.38 cubic meters

Due to the trafficking and inclement weather, subsidence and rutting had occurred on the cycle track. To deal with the rutting, quarried stone was imported to site and used to fill in the ruts and then level the subsiding ground. However, this was at best a temporary solution, as after the quarried stone was laid it was not long before additional trafficking and inclement weather caused more rutting and subsidence. (see pictures below).

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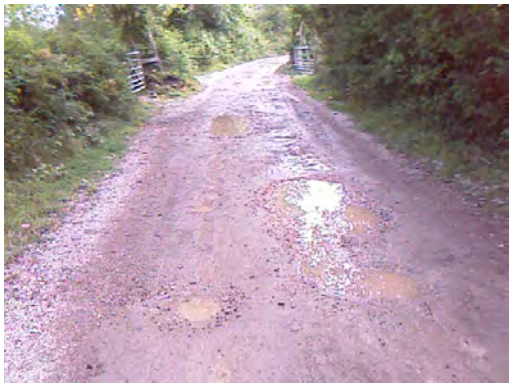
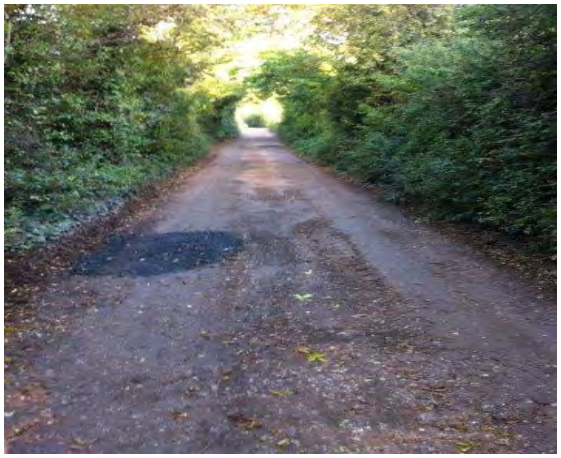


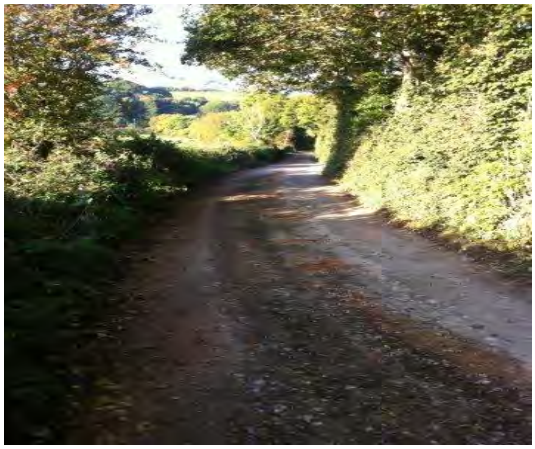
It became clear that a more permanent and environmentally friendly solution was required to remedy this problem and it was therefore decided that the cycle track would be stabilised using the SMR proprietary binder in-situ.

The Stabilisation Process

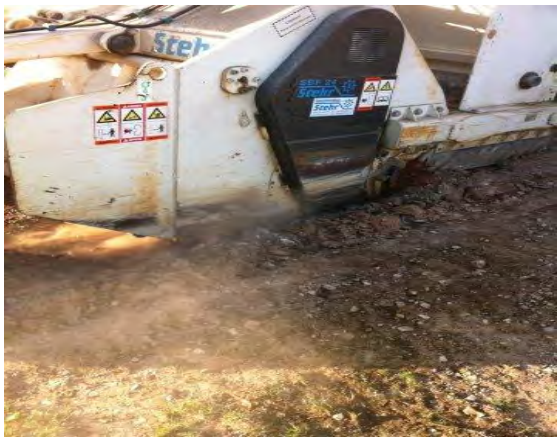
SMR Ltd appointed European Aggregate Recycling Ltd to carry out the this process. For the design of the cycle track a single layer of stabilised material was required. Exeter City Council's appointed contractor provided a tracked vehicle to load the SMR proprietary binder into the stabilisation hopper. European Aggregate Recycling Ltd then used traditional stabilisation equipment and methods to spread and mix the SMR proprietary binder into the existing cycle track. Exeter C C's contractor levelled and compacted the SMR mixed material and completed the job by applying the wearing course. The process of the sub-base construction using the SMR proprietary binder is shown below:

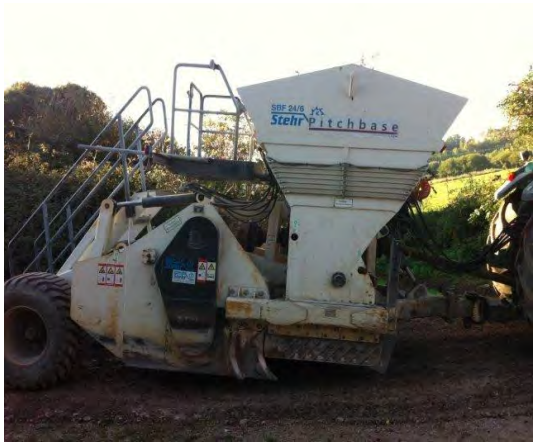
1) Remove any top soil, contamination or foreign objects from the area to be treated.

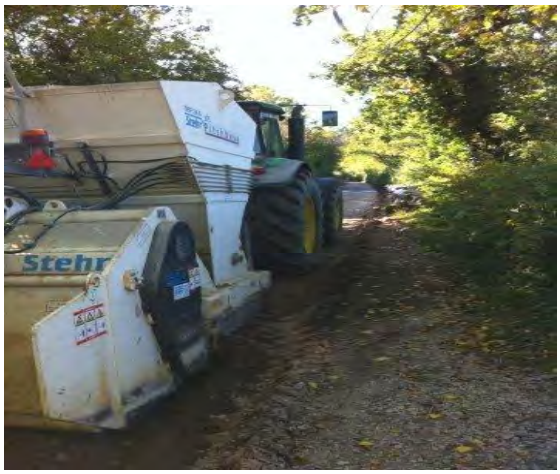




2) Spreading and mixing of the SMR proprietary binder







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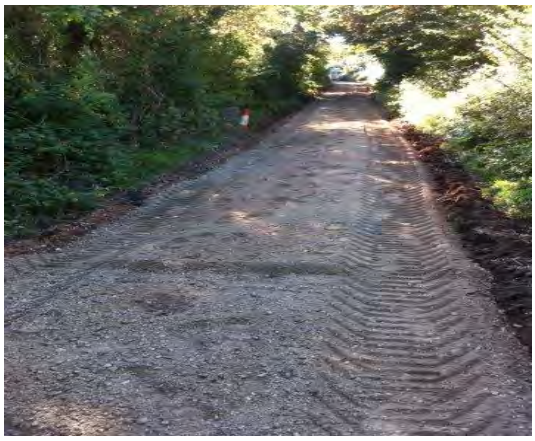
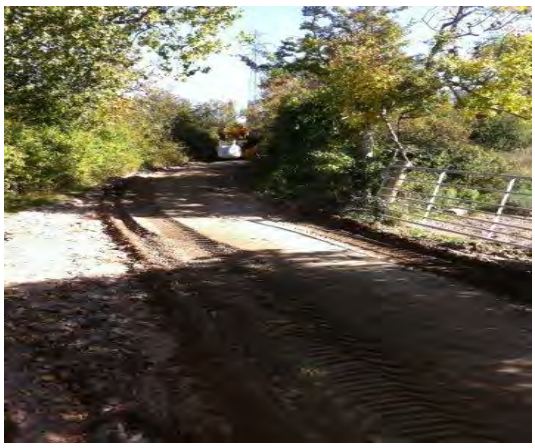
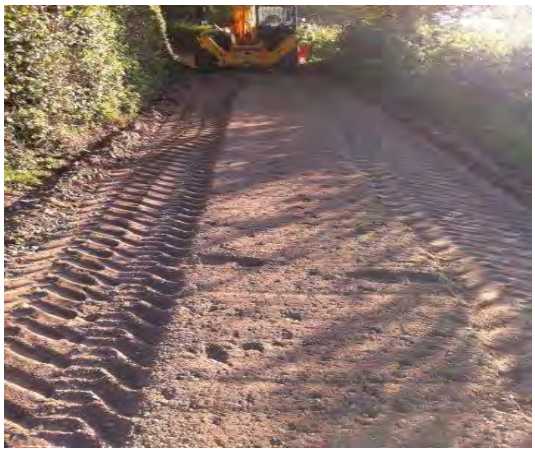
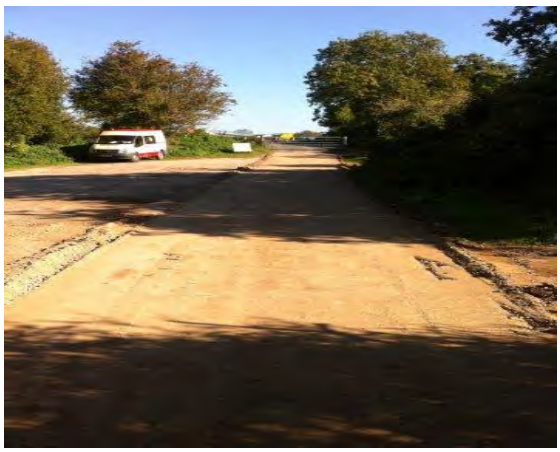
3) Material mixed with the SMR proprietary binder





4) Levelling the SMR mixed material





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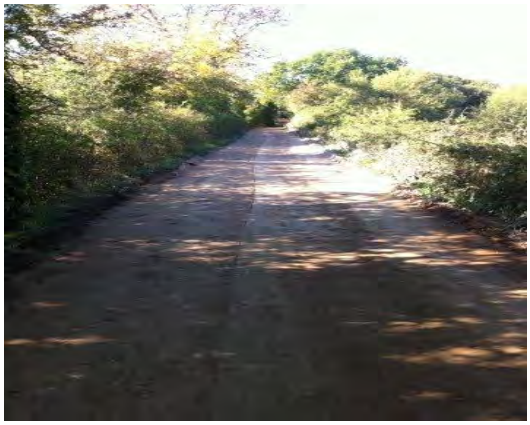
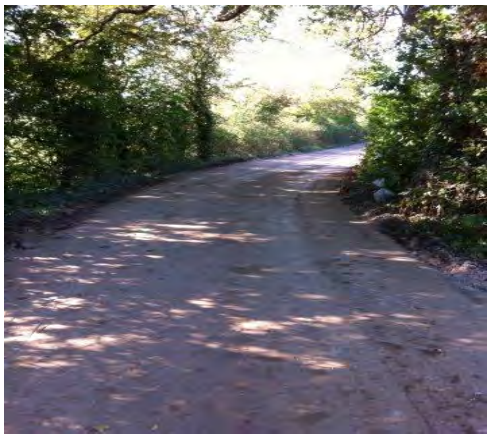
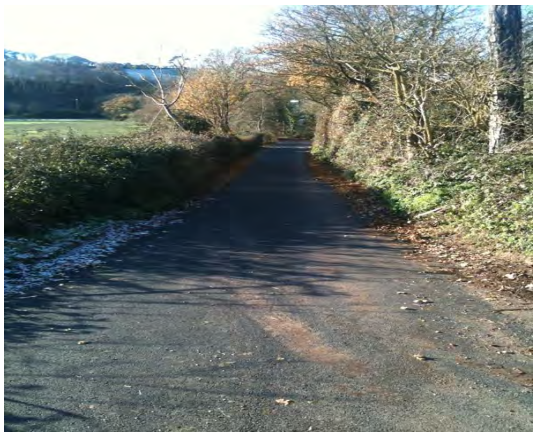
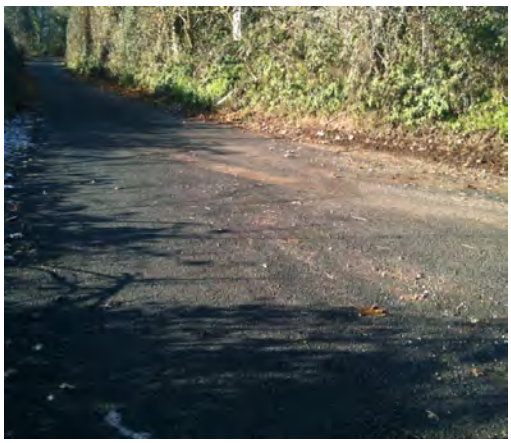
*5) SMR mixed material **after** compaction to form Sub-Base*

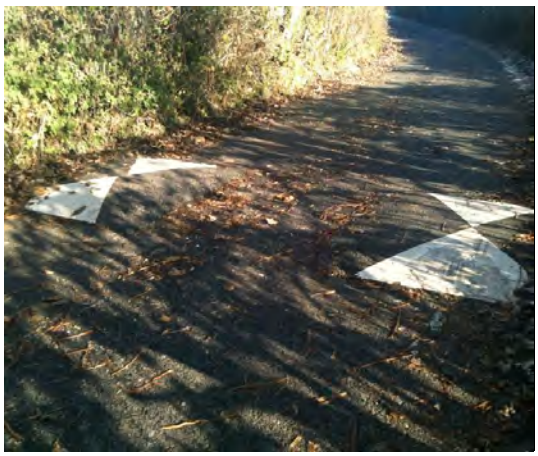


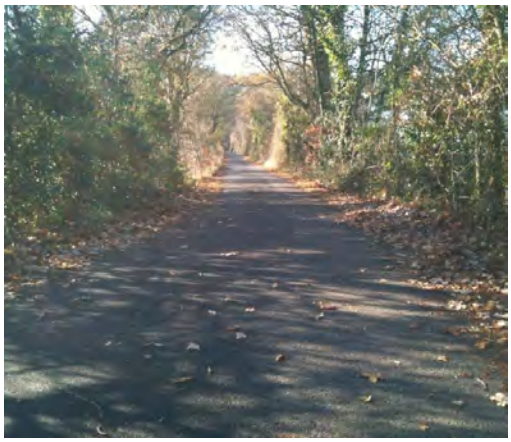


6) Finished Cycle Track after application of the Wearing Course









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Benefits of Using the SMR Stabilisation Process

Reduced Lorry Movements

By carrying out the process in-situ the amount of lorry movements required were minimal compared to traditional methods. If traditional methods had been used, the entire track would have required excavating and then would be transported off site (most likely to landfill). Primary aggregate would then have been imported to construct the sub-base of the cycle track. After this the primary aggregate is levelling/graded and compacted to produce the sub-base for the track.

By using an in-situ stabilisation method with the SMR proprietary binder it was not necessary to transport any material off site nor transport any primary aggregate to site. Only one machine was needed to mix the SMR proprietary binder into the existing cycle track. After the material had been mixed, as with the traditional method, the material was then levelled and compacted.

Reduced Job Time

As there was no need to transport any excavated material off site and import primary aggregate in its place, this significantly reduced the job time. In addition to this, if the job had been carried out using traditional methods, the imported primary aggregate would have to be deposited in a storage/lay down area and then transported to the area of the cycle track where it was intended to be used. By using the SMR solution this was avoided as the material was treated in-situ and therefore not moved in the first place.

Achieving a 100% recovery rate

With the SMR solution all material in the cycle track was re-used and converted into a stabilised material that was used as the sub-base layer of the cycle track. This resulted in zero material being sent to landfill and zero use of primary aggregates.

Achieving a higher load bearing performance from the stabilised product

The Stabilised Sub-Base layer constructed using the SMR proprietary binder achieved very high load bearing capabilities which were far higher than that which would have been achieved using Primary Aggregates.

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Social Disruption

The cycle track is accessed via Sannerville Way (A379) which is a heavily trafficked road in Exminster. By using the in-situ stabilisation technique with SMR on the cycle track the amount of lorry movements was minimal and therefore the disruption to motorists on Sannerville Way was minimised.

Summary of Benefits: SMR vs Traditional

Factor/Benefit	**SMR Method**	**Traditional Method**
Lorry Movements to and from site	8	144
Job Time for Sub –Base Construction	1½ days	2 Weeks (10 days)
Material sent to Landfill	0 tonnes	1410 tonnes
Primary Aggregate Imported	0 tonnes	1410 tonnes
Load Bearing Performance	5N/mm2	30% CBR