RAYLINK CONSULTING

Tasmanian North East Rail Line

Assessment for Establishing a Heritage Rail Operation

Revision 3 - 3/08/17

Executive Summary

The Tasmanian Government has made a commitment to assess the merits of a proposal submitted by the Launceston and North East Railway (L&NER) to re-establish a passenger rail experience between Launceston and Scottsdale on what is currently a non-operational line. As part of the assessment, Government has engaged Raylink Consulting (Raylink) to assess the condition of the rail infrastructure and provide advice on what is required to rehabilitate the infrastructure for operation of a heritage type of rail service.

Raylink carried out an inspection of the line to Scottsdale and carried out an assessment of the rail infrastructure condition including recommendations as to what components of the infrastructure require rehabilitation before a heritage rail service could commence.

The rails are considered to be in a satisfactory condition for the heritage operation, however, the rails are generally in short lengths, with fish plated joints, and these joints have rusted. They are no longer capable of performing the task of absorbing thermal expansion of the rails in hot sunny weather. The fishplates at joints will need to be removed, greased and then re-applied and bolted together.

There is a mix of steel sleepers and timber sleepers on the line to Scottsdale. The steel sleepers are in reasonable condition, however the timber sleepers have deteriorated with exposure to the elements. To make the track safe for the passage of heritage trains, it will be necessary to replace approximately 1 in every 3 sleepers on straight track and 1 in 2 sleepers on curved track. The crushed stone ballast supporting the sleepers is considered to be in satisfactory condition.

The track drainage system in some of the cuttings is badly silted and not properly performing its function of carrying surface water away from the track structure. The drains need to be cleaned out by removing the silt in accordance with standard practice.

The track beneath the level crossings has not had any maintenance since at least the time train services were suspended. To ensure the track in the crossings is capable of safely carrying trains, it is recommended that the level crossings be opened up for inspection and rebuilt where necessary. Ten of the crossings between Turners Marsh and Scottsdale were equipped with warning bell systems and it appears that the warning systems have been removed. It is understood that L&NER have indicated that there may in fact be 15 crossings that potentially require active protection. The warning systems need to be rebuilt in conjunction with the line being re-opened.

There are ten bridges on the section of line under investigation. The bridges vary in length from 2.5 metres to 100 metres. One bridge is constructed entirely of timber, it is collapsing and requires full reconstruction. The abutments, piers and beams of most of the other bridges are in reasonable condition. Most of the bridges have timber decks supporting the track. The decks are generally in very poor condition and need to be replaced for a heritage rail service to commence. Some of the bridges have open decks with specially machined sleepers, known as transoms, supporting the rails. In all of such bridges, the transoms are in very poor condition and require replacement.

In a number of locations, it will be necessary to cut back trees and bushes that have grown close to the line. This will be particularly needed for the operation of a steam train because of the increased risk of fires starting from sparks.

Itemised concept estimates have been prepared for the three stages L&NER has indicated it will use to progressively introduce heritage train services. Due to the intent to run a locomotive as the final stage, the most efficient way of accommodating this will be to not replace sleepers on the first two sections just to accommodate the railcar. This means replacing more sleepers up front. On this basis, the estimated cost to rehabilitate the necessary rail infrastructure between Turners Marsh and Lilydale Falls for operation of a lightweight heritage rail car is approximately $5.6m. The estimated cost to rehabilitate the necessary rail infrastructure between Lilydale Falls and Wyena for operation of the rail car is approximately $4.0m. The estimated additional rehabilitation cost to allow the operation of operation of a steam train and the rail car from Turners Marsh through to Scottsdale is approximately $6.3m. It should be noted that these costs are based on the assumption that serviceable rails and sleepers can be obtained from TasRail at no cost to the project. The estimates use commercial rates for labour and could be adjusted to reflect possible volunteer labour when it becomes clear how much volunteer labour is expected to be made available for the rehabilitation work.

Table of Contents

1. Introduction

The Tasmanian Government has committed to assessing the merits of a proposal submitted by the Launceston and North East Railway (L&NER) to re-establish a passenger rail experience between Launceston and Scottsdale on what is currently a non-operational line within the Tasmanian rail network.

The northeast line has not been open to rail traffic since 2004 and TasRail has retained the line on a care and maintenance basis since taking over the line from Pacific National in 2007.

With the recent passing of *the Strategic Infrastructure Corridors (Strategic and Recreational Use) Act 2016* and the intent to appoint Dorset Council to be the manager of the corridor for the purposes of implementing a cycle trail along much of the non-operational line, it is necessary to ensure a timely assessment of the claims of the L&NER relating to its capability to implement a sustainable passenger rail service before further progress on the bike trail is made.

L&NER's proposal is in three stages, with the first being the running of a railcar between Turners Marsh and Lilydale, with future stages to Wyena/Lebrina Vineyard and lastly the full distance of the non-operational line through to Scottsdale, utilising both steam engine and railcar. A possible last stage between Coldwater Creek and Turner's Marsh, which would provide access to the TasRail main line, has not been assessed as part of this exercise. The L&NER proposal makes claims about the track condition and the cost of capital works required to restore the rail to a standard that would meet regulatory requirements.

In response to the above background, this report has been commissioned. The report provides an assessment of the rail infrastructure condition between Turner's Marsh and Scottsdale, (including rails and fastenings, sleepers, ballast, drainage, bridges crossings, etc.). Included with the condition assessment is discussion on recommended rehabilitation works.

It provides concept cost estimates for the capital works required to bring the section from Turner's Marsh to Lilydale Falls up to a standard needed to run a heritage railcar.

It also provides concept cost estimates for the capital works required to bring the section from Lilydale Falls to Wyena/Lebrina Vineyard up to a standard needed to run a heritage railcar.

It also provides concept cost estimates for the capital works required to bring the section from Turners Marsh through to Scottsdale up to a standard needed to run a heritage rail car and a steam engine and carriages from Turners Marsh to Scottsdale.

The report provides an outline of the National Rail Safety requirements under which the heritage railway will have to comply with to gain accreditation to operate.

The report then takes a high level look at potential co-location of a bike trail with the operation of the heritage railway.

2. Infrastructure Features of the North East Rail Line

The Tasmanian North East rail line track consists a mix of 30kg/m (60lb/yd nominal) and 40kg/m (80lb/yd nominal) rail laid mostly in short lengths. Based on the track investigation and TasRail's advice, it appears that approximately 60% of the sleepers on the line are steel with the remainder being timber. The sleepers are laid on crushed stone ballast. Major bridges on this line between Turners Marsh and Scottsdale are as follows:

- Bridge at 13.5km, Karoola, made up of 10 No.10 metre spans
- Bridge at 23.5km, consisting of a single 8 metre span over a creek
- Bridge at 23.6 km, which is 1 No. 2.5 metre span
- Bridge at 23.85km, made up of 2 No. 8 metre spans over a creek
- Bridge at 24.2km, over the road to Lilydale Falls consisting of 2 No. 15 metre spans
- Bridge at 37.75km, made up of 3 No. 5 metre spans over a creek
- Lisle Creek bridge, at 45.8km, consisting of 2 No. 11 metre spans
- Little Forester River bridge, at 47.65km, made up of 3 No. 17 metre spans
- A second Little Forester River Bridge, at 47.8km, consisting of 4 No. 4.5 metre spans
- Bird River bridge (Lietinna), at 58.5km, made up of 7 No. 10 m. spans

3. Rail Infrastructure Inspection & Rehabilitation Work

The existing rail infrastructure was inspected on 3/07/2017 by high-rail vehicle with frequent inspection by foot where necessary. TasRail's bridge inspector drove the hi-rail vehicle and provided additional verbal background information during the inspection. The various rail infrastructure components that make up the existing line are discussed below.

3.1 Track Infrastructure

The rail track structure is made up of a number of different component that are dealt with individually.

3.1.1 Rails & fastenings

The rails on the line consist of nominal 30 kg/m rail and 40kg/m rail. The rails are generally in a satisfactory condition for carrying the rail car or the steam train. The rails are generally in short lengths with fish plated joints. All of the fish plated joints that were observed in the site inspection are rusted and appear to be frozen. Figure 1 below shows a picture of the rusted fishplates and figure 2 shows the area of concern.

Figure 1. – Rusted fishplate

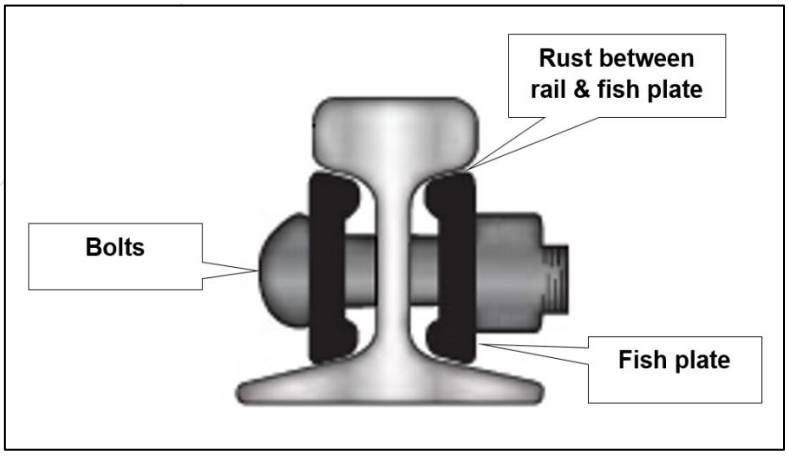

Figure 2. – Area of concern

This means the fish plates cannot be guaranteed to accommodate rail thermal expansion and contraction. The risk that this issue results in is track buckling which can cause derailments. In order to satisfactorily manage this risk it is suggested that:

- the bolts be removed by flame cutting
- the fish plates be removed
- the matching surfaces be wire brushed and lubricated with grease
- the fish plates be put back in place
- new bolts be inserted and tightened

Allowance has been made in the cost estimate for the above-described joint rehabilitation.

3.1.2 Sleepers

There is a mix of steel sleepers and timber sleepers in the line to Scottsdale. TasRail has advised us, that approximately 60% of the sleepers are steel and the inspection shows that they are in satisfactory condition to accommodate the loads that will be imposed by the rail car as well as the steam train.

The timber sleepers have deteriorated with exposure to the elements. Figure 3 below shows a badly deteriorated sleeper which is reflective of a small percentage of sleepers, but many others are showing signs of rotting and splintering and also need replacement.

Figure 3. – Life expired sleeper

As part of the track rehabilitation, it will be necessary to replace some timber sleepers. The accepted practice on heritage railways, operating steam trains, is to have at least 1 in every 3 sleepers on straight track in good condition and capable of holding gauge. In other words capable of preventing the rails from moving outward under the load of the train. On curves, the practice is to have 1 in 2 sleepers capable of holding gauge and acting as bearers. The picture in figure 4 below shows the type of plant normally used during the partial resleepering process. This sleeper inserter mechanism can be mounted on a backhoe or small excavator. Figure 5 shows a typical small tamping machine that is used to tamp the replacement steel sleeper. This ensure ballast is well compacted under the steel sleeper thereby making it capable of carrying the forces applied under the load of a train.

Figure 4. – Steel sleeper being inserted in track

Figure 5. – Example of a small tamping machine

In the operational scenarios where only the lightweight rail car is to be operated the timber sleeper it is considered that the replacement rate could be reduced to 1 in 4 on straight track and 1 in 3 on

curves. Unfortunately, because of the staged reopening scenarios proposed this lesser rate of resleepering would not work. If the rate of 1 in 4 on straight track and 1 in 3 on curves on the first two sections is adopted to make the track safe for rail car operation then, when the third stage, with the steam train, is introduced it would be necessary on straights to insert an extra a steel sleeper midway between the sleepers in the initial resleepering. Similarly, on curves, it would be necessary to insert an extra a steel sleeper between the sleepers in the initial resleepering. Overall, this is a less efficient way of carrying out the resleepering work and it is recommended that the 1 in 3 replacement rate on straights and the 1 in 2 replacement rate on curves should be adopted initially even though it may be more than is needed for introduction of the rail car operation.

In practice, because some sections of track have only timber sleepers and other sections have only steel sleepers, the cost of sleeper rehabilitation will vary considerably from one section to another. The cost estimates are based on the assumption that overall, 60% of the sleepers on the line are steel and do not require attention. In other words, the sleeper replacement cost for smaller sections should only be used as a broad approximation and may either understate or overstate the cost, whereas the overall total sleeper replacement cost from Turners Marsh to Scottsdale is likely to be more precise.

3.1.3 Ballast

The North East line is ballasted with crushed stone ballast that is in reasonable condition is considered fit for purpose.

3.1.4 Formation

The track formation (earthworks) on the line to Scottsdale is in reasonable condition and is considered fit for purpose.

3.1.5 Track drainage

The track drainage system in some of the cuttings is not properly performing its function of carrying surface water away from the track structure. The badly silted drains need be cleaned out by removing the silt in accordance with standard practice. Figure 6 below shows a picture of a silted cess drain.

Figure 6. – Example of a silted cess drain

3.1.6 Track through level crossings

The line to Scottsdale has a number of level crossings and the track beneath the crossing surface has not had any maintenance since at least the time train services were suspended. Figure 7 below shows the deteriorated level crossing at Scottsdale.

Figure 7. – Deteriorated level crossing at Scottsdale

The practice on rail systems is to intermittently open the crossing and renew the track structure. The track within a crossing is prone to deterioration and the rails within the crossing are subject to an increased rate of corrosion. As an example of the risk associated with this issue, figure 8 shows

a picture of a broken corroded rail taken from a crossing after the rail broke under a train causing a serious derailment.

Figure 8. – Broken rusted rail taken from a crossing after the rail causing a derailment

It is recommended that L&NER's Safety Management System (SMS), when it is developed, should be written in a way that leads to level crossings on the North East line being opened up, inspected and rebuilt through the crossing unless it is found that the track is in good condition. Section six of this report provides more information about the Safety Management System.

The level crossing track reconstruction involves removing the road surface material and track then rebuilding the track and reinstating the road surface. Figure 9 depicts the type of work involved in rebuilding the crossings after it has been opened up.

Figure 9. – Showing some of the work involved in rebuilding a level crossing

The picture on the left shows ballast unloaded onto the opened crossing and the picture on the right shows sleepers being bought in and placed on the ballast ready for the track to be laid.

3.2 Level crossings protection system

TasRail advises that between Turners Marsh and Scottsdale there were 10 level crossings that were protected by flashing lights, while L&NER itself suggest up to 15 actively controlled crossings may be required. Most of the level crossing protection system, including the bells and the equipment boxes, has been removed. This will mean an almost total rebuild of the system will be required prior to the reintroduction of train running. Figure 10 shows a picture of an abandoned level crossing at Scottsdale where all that remains of the protection system is the pole on which the bells used to be mounted.

Figure 10. - Abandoned level crossing with only a post remaining

It is likely that the yet to be developed SMS will recommend the level crossing protection system be reconstructed prior to reopening of the line to heritage trains. Unfortunately, the cost of rebuilding the level crossing protection is likely to be quite expensive, as new signalling equipment will probably be needed.

The cost estimates are based on the assumption that the 15 level crossings identified by L&NER will be provided with flashing lights. In Victoria, when lines have been closed then reopened after a number of years, the common practice is to have a fresh look at the risk of collision at all level crossings. In practice, this has meant additional crossings are now actively protected. In addition, current standards generally prescribe that active level crossing protection is by means of flashing lights and boom barriers, whereas in the past, the use of flashing lights only was often regarded as acceptable.

This issue has already emerged on the North East line where the local council has written to Infrastructure Tasmania, indicating they have safety concerns regarding having only passive level crossing protection at Burns Road, Wyena, Virginia Road at Golconda, Lisle Road at Nabowla and North Blumont Road at Blumont. They have indicated that these roads all have large plantation estates beyond the rail line which when being harvested (usually over the summer period) carry significant numbers of log trucks on a daily basis. They have indicated they believe McKay's Road and Lister's Lane, both of which carry large quantities of agricultural freight at certain times of the year, also pose a significant risk. The council has indicated they would oppose some crossings having only passive controls.

The cost estimates have dealt with the potential additional cost of active protection of any additional crossings in the risk contingency section of the estimate.

3.3 Bridges

As mentioned previously, there are a number of bridges between Turners Marsh and Scottsdale. The list of bridges between Turners Marsh and Scottsdale was shown at the beginning of this report. Each bridge will be discussed in this section of the report.

3.3.1 Bridge at 13.5km - Karoola

This bridge has 10 No. 10m metre spans. A picture of this bridge is shown below.

Figure 11. - Bridge at 13.5km - Karoola

The deck of this bridge is timber, the beams are steel and the abutments and piers are concrete. The bridge is in reasonable condition except for the timber deck. The deck is falling away in some places and requires replacement. Timber deck rotting occurs on many of the bridges and the picture below clearly shows the issue.

Figure 12. – Picture of a collapsing bridge deck - typical of many bridge decks on the North East line

3.3.2 Bridge at 23.5km

This bridge has a single 8m metre span. The deck of this bridge is timber, the beams are steel and the abutments are concrete. The bridge is in reasonable condition except for the timber deck. The deck is generally falling away and requires replacement. The figure above shows a picture of the rotten deck on this bridge.

3.3.3 Bridge at 23.6km

This bridge has a single 2.5m span. A picture of this bridge is shown below.

Figure 13. - Bridge at 23.6km

The bridge has an open deck, the beams are steel and the abutments are concrete. The bridge is in reasonable condition except for the transoms (sleepers that have been machined to a uniform depth). The transoms require replacing before trains commence operation.

3.3.4 Bridge at 23.85km

This bridge has 2 No. 8m metre spans. A picture of this bridge is shown below.

Figure 14. - Bridge at 23.85km

The deck of this bridge is timber, the beams are steel and the abutments and piers are concrete. The bridge is in reasonable condition including the timber deck.

3.3.5 Bridge at 24.2km – Lilydale Falls

This bridge has 2 No. 15m metre spans. A picture of this bridge is shown below.

Figure 15. - Bridge at 24.2km

The deck of this bridge is steel rails. The beams are steel and the abutments and piers are concrete. The bridge is in reasonable overall condition.

3.3.6 Bridge at 37.75km

This bridge has 3 No. 5m metre spans. A picture of this bridge is shown below.

Figure 15. - Bridge at 37.75km

As can be seen in the photo, this bridge is built entirely of timber. It is collapsing and requires total replacement.

3.3.7 Bridge at 45.8km

This bridge has 2 No. 11m metre spans. A picture of part of this bridge is shown below.

Figure 16. - Bridge at 45.8km

The bridge has an open deck, the beams are steel and the abutments and piers are concrete. The bridge is in reasonable condition except for the transoms, which require relacing before trains commence operation.

3.3.8 Bridge at 47.65km

This bridge has 3 No. 17m metre spans. A picture of this bridge is shown below.

Figure 17. - Bridge at 47.65km

The deck of this bridge is timber, the beams are steel and the abutments and piers are concrete. The bridge is in reasonable condition except for the timber deck. The deck is falling away in some places and requires replacement.

3.3.9 Bridge at 47.8km

This bridge has 4 No. 14.5m metre spans. A picture of this bridge is shown below.

Figure 18. - Bridge at 47.8km

The deck of this bridge is timber, the beams are steel and the abutments and piers are concrete. The bridge is in reasonable condition throughout.

3.3.10 Bridge at 58.5km – Bird River

This bridge has 7 No. 10m metre spans. A picture of this bridge is shown below.

Figure 19. - Bridge at 58.5km

The deck of this bridge is concrete, the beams and abutments are concrete while the piers are timber. TasRail advises that this bridge was rebuilt not long before the line was closed to trains and therefore the bridge is generally in good condition. The piers on this bridge are timber which should be subject to a more detailed examination before trains are allowed to run again. This would include drilling the piers to look at soundness.

3.4 Tunnel at 29.4km

The tunnel appears to be generally in reasonable condition apart from drainage issues as can be seen in the pictures below taken at both ends of the tunnel.

Figure 20. – Pictures of tunnel showing failed drainage system and flooded track

It is not acceptable to have water sitting on the track up to the top of the sleepers. The tunnel drainage system needs to be rectified. It is suggested that the drains in the tunnel, and the cuttings at either end, should be dug out and have pipes installed on both sides of the track.

3.5. Cess Drain Cleaning

Some of the open track drains (cess trains) have become silted over the years and will require cleaning out to ensure the rehabilitated track is well drained. Figure 21 below shows a typical silted malfunctioning open cess drain.

Figure 21. – Picture of silted cess drains

3.6. Vegetation Growth

In a number of locations, it will be necessary to cut back trees and bushes that have grown close to the line. This will be particularly needed for the operation of a steam train because of the risk of fires starting from sparks. The pictures below show two locations were vegetation will be a problem.

Figure 22. – Examples of areas requiring vegetation clearing

3.7 Engine Run Around

In order to run the steam train with the loco at the front in both directions, it will be necessary to build a siding, including two turnouts, at Turners Marsh as well as at Scottsdale in the scenario

where steam trains run from Turners Marsh all the way to Scottsdale. This facility is referred to as an engine run around. Figure 23 shows a steam engine using an engine run around facility to place the loco on the opposite end of the train for a return journey.

Figure 23. – A steam loco changing ends on a typical engine run around track

This type of facility is not needed to operate the rail car.

3.8 Passenger facilities

It will be necessary to allow for some passenger facilities such as a basic unsealed car park, a small shelter, toilets etc. where people are going to catch a heritage train. At this stage of the project's development, we do not have details of what these facilities will look like or precisely where they will be located, so a nominal sum allowance has been made in the estimates.

3.9 Miscellaneous Works

As well as the above-mentioned specific works, the re-establishment of the line will also require a number of miscellaneous activities such as signage, material storage, site access, etc. A nominal sum has therefore been included in the cost estimate for miscellaneous works.

4. Cost estimates

It is acknowledged that tourist/heritage railways run on a lot of volunteer labour, materials and plant.

At a meeting with Infrastructure Tasmania and representatives of L&NER, it was agreed to consider these factors in the estimates by preparing standard type of estimate then subtracting cost of labour and plant that L&NER are able to provide. The assumptions around volunteer commitments would then be itemised so that there is visibility of the costs involved. This itemisation occurs in Infrastructure Tasmania's report from Linqage International.

The following main estimates have therefore been prepared:

- Estimate scenario 1 – Infrastructure rehabilitation works estimate for Turners Marsh to Lilydale Falls rail car operation – see appendix 1
- Estimate scenario 2 – Infrastructure rehabilitation works estimate for extension of rail car operation to Wyena/Lebrina Vineyard – see appendix 2
- Estimate scenario 3 – Infrastructure rehabilitation works estimate for extension of rail operation from Turners Marsh to Scottsdale including operation of both rail car and steam train – see appendix 3

It has also been necessary to prepare unit rates estimate for various track rehabilitation work to support the above estimates. The unit rates estimates are also provided in the appendices.

5. Bike Path

Co-location of a bike path and an operating railway gives rise to the risk of bike path users straying on to the rail line and being hit by a train. The co-located bike path on the Upfield rail line in Victoria appears to have been successfully mitigated this risk by construction of a dividing fence. Figure 24 below shows a photo of the Upfield rail line and bike path with the dividing fence in place.

Figure 24. – Picture of Upfield line bike path in Victoria

The terrain between Turners Marsh and Scottsdale does not look like the terrain encountered on the Upfield rail line. Instead of being flat land, the Scottsdale line passes through undulating land where the rail line is frequently in a cutting, on an embankment and occasionally on a bridge structure. This feature would make it a lot more difficult and costly to construct a co-located bike path than was the case on the Upfield rail line in Victoria. It is recommended that an assessment of the earthworks required to widen embankments and cuttings be undertaken before a decision on this issue is made.

The second issue is the bridgework needed for a bike path. In the scenario where the L&NER heritage rail operation does not proceed, the rail bridges on the Scottsdale line would be redecked and provided with fences for the introduction of the bike path. In the scenario where the L&NER operation proceeds with a co-located bike path, it would be necessary to build new bridges next the existing rail bridges to support the bike path. Another option in this scenario would be to support the bike path on a cantilevered support system mounted on the existing bridge beams. Again, it is recommended that this should be the subject of an assessment before a firm decision is made however, as an example of the significant cost involved, dividing fencing between a bike track and rail line for the entire 60km of the line would cost approximately $10 million.

Figure 25 below provides a visual example of a pathway attached to a railway bridge.

Figure 25. – Pathway next to a rail bridge

6. National Rail Safety Requirements

The Office of The National Rail Safety Regulator (ONSR) deals with large complex railways as well as small isolated railways. Like all railways, the small isolated railways operating low speed heritage trains must manage all safety risks within their railway. ONSR has prepared and published a document titled "Guideline - Small isolated line heritage operations – Safety management system (SMS)" published on 7th September 2016. This guideline provides practical guidance to small isolated line heritage operators on meeting the requirements of the Rail Safety National Law (RSNL) for implementing a safety management system (SMS). The guideline tries to outline what compliance may look like for a small isolated low speed heritage type of railway.

Small isolated line heritage operators should use the guideline in developing their SMS. The SMS is a living, breathing documented system of safety that should be fit-for-purpose and used daily. It covers a number of elements that an operator must address and describes what an operator does to manage safety risks. Preparation of an SMS takes considerable effort and is likely to cost well over a hundred thousand dollars.

The goal is to have an SMS that provides direction on how the organisation will identify and control risks, and effectively communicate safety knowledge. It is a written document, approved by the CEO of the railway that identifies each person responsible for preparing any part of the SMS, and the person/s responsible for implementing the system. The SMS shows how the risks will be controlled (including governance, audits, expertise, resources) and includes procedures for reviewing and changing this (e.g. when there is an incident, what has to be done to fix it and to prevent it from happening again). The SMS is a very broad system, which covers all aspects of the railway including such things as operations, rolling stock (in this case the rail car, the steam loco and the heritage

passenger cars), track, structures etc. Development of the SMS will provide the basis for calculating the ongoing cost of operating the railway.
Rail Safety National Law requires that a railway must apply for and be granted accreditation before it commences railway operations. The purpose of accreditation of a rail transport operator, in respect of railway operations, is to attest that the operator has demonstrated to the National Rail Safety Regulator the competence and capacity to manage safety risks associated with railway operations. In other words, L&NER will need to demonstrate to the regulator, its competency and capacity to implement its SMS and to safely manage its operations. Given the preceding assessment of the condition of the rail infrastructure, particularly relating to sleepers, bridge decks and fish plates, proving this to the ONSR will not be a straightforward process.