



## RISK ANALYSIS

The next sections deal with the identification of risk in delivering LTP2 objectives and how this can be managed.

Risk analysis ensures that the delivery of the LTP outcomes is exposed to a level of risk which is acceptable and manageable.

It will be impossible to eliminate all elements of risk from delivering our outcomes at the start of the Plan. As such we have ensured that we have mechanisms in place to review and monitor our progress at all stages of Plan delivery. The risk management process, set out in the next section, will therefore be an integral part of the Plan over the coming five years.

The process we will follow is set out in Figure 4.6.

### RISK IDENTIFICATION

The targets we have set are the measure of outcomes as such these are used as the focus for risk identification.

As part of a target setting workshop a technical panel has also compiled a comprehensive list of risks to each target. This forms our comprehensive risk register. The full set of risks can be seen in Table 4.3 and Appendix F.

### QUANTIFYING THE RISK

Whilst it is clear that there are risks associated with each target, not all will have the same impact on outcomes. In order to quantify this we have set up a framework for assessing the level of risk and the subsequent methods of management. The details of this are also set out in Table 4.3.

In terms of quantifying the risk we have used a standard approach of first identifying the likelihood or probability and then assessing a potential impact on the target area. Both assessments utilise a simple scoring process as follows:

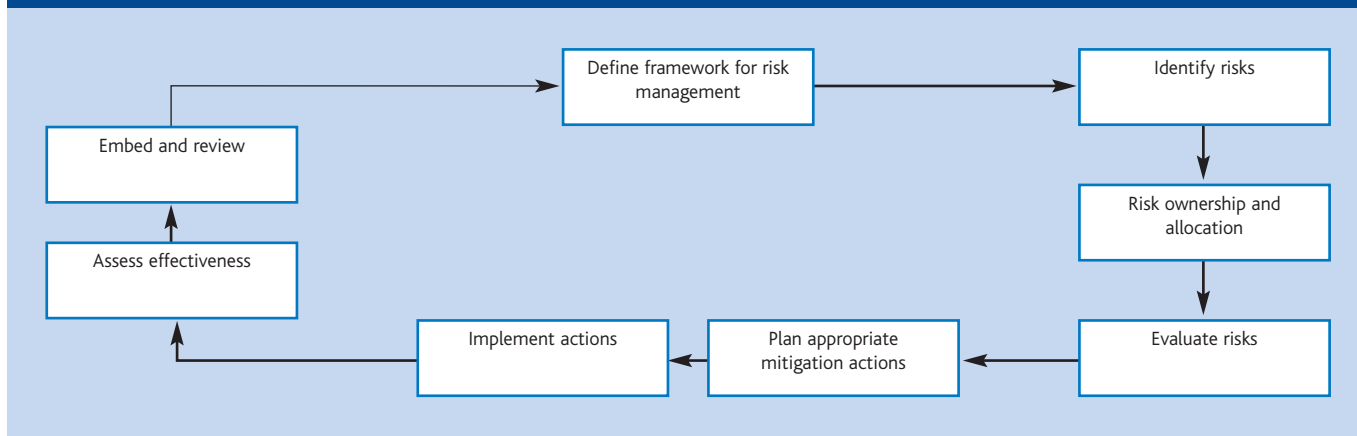
PROBABILITY	IMPACT	SCORE
Very High	Severe	5
High	Major	4
Medium	Moderate	3
Low	Minor	2
Very Low	Insignificant	1
Nil	Nil	0

The relative assessments were undertaken by a second technical panel. The purpose of the scoring was to highlight the risks that were judged to be of greatest threat to the delivery of LTP2. This was assessed by producing a Risk Index score which combined both probability and impact.

Each risk was then graded into a red, amber or green category, where red is the most significant risk item. The grading criteria used was:

CATEGORY	SCORE
Red	Above 15
Amber	10-15
Green	Below 10

**FIGURE 4.6 - RISK MANAGEMENT PROCESS  
(MANAGING SUCCESSFUL PROGRAMMES - OFFICE OF GOVERNMENT COMMERCE - 2003)**





## TYPES OF RISK IDENTIFIED

Through the process we have chosen, it has been possible to identify common areas of risk. These are largely confined to the four categories set out below plus a generic set.

### EXTERNAL RISK

A number of factors will impact upon the eventual outcomes but are not linked directly to the LTP delivery process. These include:

- strong economic growth leading to a higher than expected growth in car ownership and use;
- a relative decrease in the cost of car use;
- widespread service disruption as witnessed on the rail network during LTP1;
- energy costs; and
- specific behavioural influences such as the increase in drink or “drugged” driving.

### PROGRAMME RISK

This area of risk relates specifically to being unable to deliver our programme within the prescribed timescale.



### PARTNERSHIP RISK (INCLUDING OPERATOR PERFORMANCE)

Some of our outcomes rely on action and/or co-operation from partners such as bus operators or local health providers. Failure of engagement or support could undermine our chances of success.

### MONITORING RISK

Whilst we have taken steps to ensure that the monitoring techniques set out in the previous chapter are robust, some areas are more difficult to measure accurately than others, for example cycling.

Where this occurs we may not be able to measure changes with any degree of certainty.

### GENERAL RISK ELEMENTS

In addition to the above we have identified four overarching risks to delivery. The impacts of these are in addition to those already identified. The risks are:

- a reduction in funding levels;
- a significant increase in the overall cost of delivering schemes;
- where future legislation/central government policy does not support and help to enhance our approaches; and
- the lack of qualified staff to deliver our programme.

All areas would impact upon the eventual outcomes and need to be managed accordingly.

## KEY RISK AREAS

The risk assessment process has identified where the risk lies with each indicator and target. The process has also ranked these in terms of importance. The assessment has shown we have four targets in the red category, eight in amber and 14 in green, as shown in Figure 4.3

The key areas are:

- bus punctuality;
- satisfaction with bus services;
- overall bus patronage; and
- patronage on QBCs

In most cases the key factors for high risk are either due to external or partnership elements. Management of these areas is outlined in the next chapter and within Appendix F.

## CONTINUOUS MONITORING OF THE RISKS

Having quantified the risks and highlighted which target areas are most affected it is important that these are managed over the life of LTP2.

The risk assessment process is dynamic and will be reviewed continuously. As a result the probability and impact of each risk is likely to change as we progress through LTP2. Further risks may be added, some may no longer be relevant.



**TABLE 4.3 RISK ASSESSMENT FRAMEWORK**

TARGET	RISK	CONSEQUENCES	LIKELIHOOD	IMPACT	RI *	RANK **	RISK GROUP	
M1	Accessibility target	Reorganisation of health care facilities	Worsened accessibility could affect target	3	4	12	Orange circle	External
		Cooperation from key partners poorer than anticipated	Worsened accessibility could affect target	2	3	6	Green circle	Partnership
		Bus operators - reorganisation or removal of commercial bus services	Worsened accessibility could affect target	5	2	10	Orange circle	External
		Reduction in tendered services	Worsened accessibility could affect target	3	1	3	Green circle	Partnership
M2	Bus punctuality	Unable to deliver bus priority schemes to timescale	More buses late - could affect progress toward target & increased patronage	3	2	6	Green circle	Programme
		Bus operator performance + involvement + commitment poorer than anticipated	More buses late & cancelled - could affect progress toward target & increased patronage	4	4	16	Red circle	External/ Partnership
		Radical strategy undelivered (bus strategy)	More buses late - could affect progress toward target & increased patronage	4	2	8	Green circle	Programme
M3	Satisfaction with local bus services (BVPI 104)	Unable to deliver LTP2 P/T improvement schemes to programme timescale	Customer dissatisfied - affects target and lowers patronage	3	2	6	Green circle	Programme
		Bus operator performance + involvement + commitment poorer than anticipated	Customer dissatisfied - affects target and lowers patronage	4	4	16	Red circle	External/ Partnership
		Bus operators increase fares above inflation	No/lower growth in bus patronage - affects target	5	4	20	Red circle	External
		Radical strategy undelivered	Customer dissatisfied - affects target and lowers patronage	4	2	8	Green circle	Programme
		Rising expectations from customers	Customer dissatisfied - affects target and lowers patronage	4	2	8	Green circle	External
M4	Cycling (annualised index of cycling trips)	Cycle infrastructure improvements not delivered on time	No growth in cycling target	2	4	8	Green circle	Programme
		Monitoring methods unsuitable	No growth in cycling target	3	4	12	Orange circle	Monitoring
		Costs of alternative modes declines	No growth in cycling target	3	4	12	Green circle	External



TARGET		RISK	CONSEQUENCES	LIKELIHOOD	IMPACT	RI*	RANK**	RISK GROUP
M5	Average journey time per person mile on key routes	Economic and traffic growth exceed forecasts	Adds to delay and restricts growth in non car modes - target fails	2	5	10	●	External
		P/T patronage does not grow at expected rate	Adds to delay and restricts growth in non car modes - target fails	2	4	8	●	External
		Increased cost of bus use	Adds to delay and restricts growth in non car modes - target fails	5	3	15	●	External
		Car ownership costs decline	Adds to delay and restricts growth in non car modes - target fails	3	4	12	●	External
		Unable to deliver congestion elements of programme to timescale	Adds to delay and restricts growth in non car modes - target fails	2	4	8	●	Programme
		Monitoring methods unsuitable	Achievements under estimated or undetected - target fails	2	4	8	●	Monitoring
M6	Change in peak period traffic flows to urban centres	As M5 above						
M7	Mode share of journeys to school	No Target Set						
M8	Public transport patronage (BVPI 102)	Unable to deliver LTP2 P/T improvement schemes to programme timescale	No/lower growth in bus patronage - affects target	3	2	6	●	Programme
		Bus operator performance + involvement + commitment poorer than anticipated	No/lower growth in bus patronage - affects target	4	4	16	●	External/ Partnership
		Bus operators increase fares above inflation	No/lower growth in bus patronage - affects target	5	4	20	●	External
		Radical strategy undelivered (bus strategy)	No/lower growth in bus patronage - affects target	4	3	12	●	Programme
		Car ownership costs decline	No/lower growth in bus patronage - affects target	3	4	12	●	External
		Effect of free concessionary fares less than anticipated	No/lower growth in bus patronage - affects target	3	4	12	●	External



TARGET	RISK	CONSEQUENCES	LIKELIHOOD	IMPACT	RI *	RANK **	RISK GROUP	
M9	Total KSI casualties (BVPI 99)	Existing policy, initiatives and implementation less effective than anticipated	Fail to meet target	3	3	9	●	Programme
		Relaxation of efforts to control speed especially in residential areas	Fail to meet target	2	4	8	●	External
		Insufficient funding for speed cameras	Fail to meet target	3	3	9	●	External
		Increase in drink/drugged driving	Fail to meet target	3	3	9	●	External
M10	Child KSI casualties (BVPI 99)	As M9 above						
M11	Total slight casualties (BVPI 99)	As M9 above plus the added risk of increased car ownership	Fail to meet target	As M9 above				
M12	NO <sub>2</sub> annual average concentration in designated Air Quality Management Areas (AQMAs)	Unanticipated increases in traffic growth in urban areas and motorways	Fail to meet target	2	4	8	●	External
		Unpredictable weather patterns	Fail to meet target	3	3	9	●	External
M13	Change in area wide road traffic	Economic and traffic growth exceeds recent trends	Worsening road condition/ Fail to meet target	2	5	10	●	External
M14	Principal road network where maintenance work should be considered (BVPI 223, formerly BVPI 96)	Funding levels lower than planning guidelines	Worsening road condition/ Fail to meet target	3	4	12	●	Programme
M15	Non-principal road network where maintenance work should be considered (BVPI 224a, formerly BVPI 97a)	As above plus changes in condition survey methods	Worsening road condition/ Fail to meet target	3	3	9	●	Programme/ Monitoring



TARGET		RISK	CONSEQUENCES	LIKELIHOOD	IMPACT	RI*	RANK**	RISK GROUP
M16	Unclassified road network where structural maintenance should be considered (BVPI 224b, formerly BVPI97b)	As above	Worsening road condition/Fail to meet target	4	3	12	●	Programme/Monitoring
M17	Footways where structural maintenance should be considered (BVPI 187)	As above	Worsening road condition/Fail to meet target	2	3	6	●	Programme/Monitoring
L1	Satisfaction with LTP funded public transport facilities	Operational problems affect satisfaction with facilities	Customer dissatisfied - affects target and lowers patronage	3	1	3	●	External
		Rising expectations	Customer dissatisfied - affects target and lowers patronage	4	2	8	●	External
L2	Cycling trips to urban centres during the morning peak	As per M4						
L3	AM peak period mode split to urban centres	As per M5						
L4	Peak period rail patronage	Economic decline	Reduces rail patronage - target fails	2	4	8	●	External
		New rolling stock not provided	Increases customer dissatisfaction - reduces patronage - target fails	2	4	8	●	External
		Widespread service disruption	Increases customer dissatisfaction - reduces patronage - target fails	2	4	8	●	External



TARGET	RISK	CONSEQUENCES	LIKELIHOOD	IMPACT	RI *	RANK **	RISK GROUP	
L5	Patronage on QBC's	Unable to deliver LTP2 P/T improvement schemes to programme timescale	No/lower growth in bus patronage - affects target	3	5	15	●	Programme
		Bus operator performance + involvement + commitment poorer than anticipated	No/lower growth in bus patronage - affects target	3	4	12	●	External/ Partnership
		Bus operators increase fares above inflation	No/lower growth in bus patronage - affects target	5	4	20	●	External
		Radical strategy undelivered (bus strategy)	No/lower growth in bus patronage - affects target	4	2	8	●	Programme
		Car ownership costs decline	No/lower growth in bus patronage - affects target	3	3	9	●	External
		Effect of free concessionary fares less than anticipated	No/lower growth in bus patronage - affects target	3	4	12	●	External
L6	Number of pedestrians KSI in road traffic collisions	As per M9						
L7	Annual road traffic emissions of NOx across West Yorkshire principal road network	As per M12						
L8	Annual road traffic emissions of CO <sub>2</sub> across West Yorkshire principal road network	As per M12						
L9	Structures with weight and/or width restrictions.	Faster than anticipated decline in bridge/structure stock	Fail to meet target	2	4	8	●	External
		Reduction in anticipated level of spending	Fail to meet target	2	4	8	●	Programme
L10	The number of bus shelters that meet modern standards	Higher level of shelter relocations than anticipated	Fail to meet target also affects bus patronage	1	4	4	●	External/ Programme
		Co-ordinate with other programmes	Fail to meet target also affects bus patronage	2	2	4	●	Programme

\* Risk Index

\*\* Each risk was graded into a red, amber or green category, where red is the most significant risk item