

TRAFFIC SAFETY PROJECT

APPENDIX-B

MANUAL FOR USING THE EXCEL SHEET, “BLACK-SPOT CB-ANALYSIS.XLS”

April 2001



1. Project description

Project Name	Test object road 999
Project No	2001-001
Division	
Road-Section No	
Location	
Calculations performed by	C Sachse

First you have some information about the project, such as name et cetera. After that there is a field for description about the project.

DESCRIPTION

2. Basic data, project related

Analysis Date	3/21/01
Analysis Period	20
Discount Year	2001
Opening Year	2001
Price Level Year (Base Year is 1999)	1999

Analysis date is normally set to the date of the day you save the Excel-sheet.

Analysis period is set to the time you want to analyze, normally the economic lifetime of the investment.

Discount year is the year you discount all values to, so you can compare projects that open for use different years.

Opening year is the year the investment is ready for use, or opened for traffic.

Price level year is for all effects set to 1999. If this is changed you must be cautious. It is possible to use a later price level year by using index, see below.

3. Basic data, not project related

Price level index (1999=100)	100
Discount Rate (%)	15.0%
VAT, average (%) - tax factor 1	17.0%
GNP per capita (TL)	1,216,000,000
Economic annual forecast growth (%)	5.0%

If price level year is 1999 and index is not 100, or if index is 100 and price level is not 1999 you will see a warning text:

Change index!/Base year!

It will be most correct and simple to use an index to calculate the cost of the investment to 1999. (Cost year YYYY * (index 1999/index YYYY)). If one likes to use the price level of another year it is possible to put an index in the table above which should be the change of the costs between 1999 and the index year.

Discount rate and VAT/Tax factor 1 should normally not be changed between projects, it should be changed if new values for these are decided. GNP per capita is based on the values for 1999, and can be changed if newer values are available or by using the index.

Economic annual growth is the forecast of expected economic growth each year during the analysis period, given in 1. This influences only the calculations of production loss and risk value. Other costs are not influenced by the economic growth.

4. Investment cost data

Investment years from opening year	(in price level 1999)
Year -5, M TL excl VAT	
Year -4, M TL excl VAT	
Year -3, M TL excl VAT	
Year -2, M TL excl VAT	
Year -1, M TL excl VAT	500,000
Year 0 - Opening year, M TL excl VAT	500,000
Total investment cost in M TL excl VAT	1,000,000
Yearly Maintenance (M TL) excl VAT	10,000
Invest.cost (discounted to opening year), (M TL)	1,075,000
Invest.cost (discounted to discount year), (M TL)	1,075,000

In the table above you input the cost for your project during different years before it is finished. If the project is built and opened for traffic in the same year you fill the total investment cost in year 0. In the example above the project is built in two years, 500,000 Million TL the year it is opened for traffic and the same amount the year before.

The total investment cost is the straight sum of all investment years. The cost of the investment discounted to the opening year and the discount year is accounted for in the last two rows.

If your project includes a safety measure that will mean a yearly maintenance cost (for example painting that's needed to be done every year, or road lighting that cost electricity every year) you can include the estimated cost for this during a year in the table above. In the example above 10,000 Million TL is assumed.

5. Accident and traffic data

In the first row on the table on next page you fill in how many years the accident data is covering. Normally this should be 3 or 5 years, but you can choose any number of years. Then you fill in whether the project is located in a rural or urban area, this influences the number of fatalities and injuries per accident and the cost of the accidents.

If the total number of accidents are known you give this in the third row, if it is not known you write a 0. The number of total accidents will then be calculated from the relation with the total number of fatal and injury accidents. You then enter the number of fatal and injury accidents for the whole accident period stated before.

ACCIDENT STATISTICS AND TRAFFIC DATA	
Accident period (years)	5
Rural or Urban	Rural
No of Accidents (if available)	0
No of Accidents used	63
No of Fatal & Injury Accidents	42
No of Fatal Accidents	8
No of Injury Accidents	34
Total A.A.D.T.	6000
If link length in m, intersection =0	0
Injury and fatality accident rate	3.84
Fatal accident rate	0.73

6. Estimated accident effect of the project

Estimated Accident Reductions	
	Reductions (%)
Property Damage Accidents Only	15
Fatal Accidents	50
Injury Accidents	40

In the table above the estimated reductions for the accidents with different severity is given in percent.

7. Results

In the next table different results are given. If a yearly maintenance cost is given under 4, this has been considered in the net present value of benefits, and a text will light up as shown below if this is the case. If there is no text after the net present value benefits, there is no maintenance included.

RESULTS FOR PROJECT NO	2001-001
Test object road 999	

Total Yearly Accident Cost (Million TL), before measure	513,204
Reduction of Total Yearly Accident Cost (Million TL), due to measure	244,436
Total Yearly Accident Cost (Million TL), after measure	268,767
Yearly reduction fatalities (persons)	1.7
Yearly reduction injured (persons)	7.6
Yearly reduction of injuries&fatalities (persons)	9.3
Net present value benefits (Million TL) (Incl. maintenance)	1,456,775

BCR	1.2
NPV (Million TL)	286,775