

## APPENDICES



# Appendix A – Accident Data for Dudley Town Centre Area and Brierley Hill Area

## Accident Record for Dudley Town Centre

**Castle Hill/ Trindle Road Junction****a) Accidents at junction or within metres of junction**

	Slight	Serious	Fatal	Pedestrian accidents	Average casualties per PIA
1997	0	0	0	0	na
1998	4	0	1	0 (1)	1
1999	4	0	0	0	2
2000	7	3	0	3 (2)	1.3
2001	5	0	0	0	1.8
2002	2	0	0	1	1

**b) Accidents at site of junction**

	Slight	Serious	Fatal	Pedestrian accidents	Average casualties per PIA
1997	0	0	0	0	
1998	3	0	0	0	
1999	3	0	0	0	
2000	1	0	0	0	
2001	1	0	0	0	
2002	0	0	0	0	

**Castle Hill (from junction with Trindle Road to Castle Street)**

	Slight	Serious	Fatal	Pedestrian accidents	Average casualties per PIA
1997	0	0	0	0	na
1998	5	1	1	0 (1)	1.57
1999	7	0	0	1	1.57
2000	10	3	0	3 (1)	1.31
2001	6	1	0	1	1.43
2002	6	0	0	2	1

**Trindle Road (from junction with Birmingham Street and junction with Castle Hill)**

	Slight	Serious	Fatal	Pedestrian accidents	Average casualties per PIA
1997	0	0	0	0	na
1998	8	0	0	2	1
1999	7	0	0	3	1.57
2000	3	1	0	0 (1)	1.25
2001	0	0	0	0	na
2002	1	0	0	0	2

<b>King Street (from junction with New Mill Street to junction with Hall Street)</b>						
	<b>Slight</b>	<b>Serious</b>	<b>Fatal</b>	<b>Pedestrian accidents</b>	<b>Accidents involving buses</b>	<b>Average casualties per PIA</b>
1997	0	0	0	0	0	na
1998	1	1	0	1 (1)	0	1
1999	7	0	0	1	0	1.14
2000	8	0	1	5 (1)	3 (1)	1.22
2001	1	0	1	0 (1)	1 (1)	1
2002	3	2	0	1 (1)	2 (1)	1.2

<b>King Street/ Trindle Road junction (accidents at site of junction)</b>						
	<b>Slight</b>	<b>Serious</b>	<b>Fatal</b>	<b>Pedestrian accidents</b>	<b>Accidents involving buses</b>	<b>Average casualties per PIA</b>
1997	0	0	0	0	0	Na
1998	1	0	0	0	0	1
1999	0	0	0	0	0	0
2000	1	0	0	0	1	1
2001	1	0	0	0	1	1
2002	1	0	0	0	1	2

*Bracketed figures indicate number of serious and/or fatal accidents*

#### Accident Record for Brierley Hill Town Centre

<b>Level Street/ The Embankment</b>						
	<b>Slight</b>	<b>Serious</b>	<b>Fatal</b>	<b>Pedestrian accidents</b>	<b>Accidents involving buses</b>	<b>Average casualties per PIA</b>
1998	0	0	0	0	0	Na
1999	3	1	0	1	0	1
2000	5	0	0	2	0	1
2001	4	1	0	(1)	0	1.25

<b>Five Ways Junction</b>						
	<b>Slight</b>	<b>Serious</b>	<b>Fatal</b>	<b>Pedestrian accidents</b>	<b>Accidents involving buses</b>	<b>Average casualties per PIA</b>
1998	0	0	0	0	0	Na
1999	3	0	0	3	0	1.0
2000	6	0	0	4	0	1.17
2001	3	0	1	3 (1)	1	1.0 (2.0)

<b>Level Street/Pedmore Road</b>						
	<b>Slight</b>	<b>Serious</b>	<b>Fatal</b>	<b>Pedestrian accidents</b>	<b>Accidents involving buses</b>	<b>Average casualties per PIA</b>
1998/2001	15	1	0	8 (1)		1.85 (2.0)

<b>Level Street/Waterfront Way/The Embankment</b>						
	<b>Slight</b>	<b>Serious</b>	<b>Fatal</b>	<b>Pedestrian accidents</b>	<b>Accidents involving buses</b>	<b>Average casualties per PIA</b>
1998/2001	9	1	0	3 (1)		1.11 (1.0)

<b>Level Street/Central Way</b>						
	<b>Slight</b>	<b>Serious</b>	<b>Fatal</b>	<b>Pedestrian accidents</b>	<b>Accidents involving buses</b>	<b>Average casualties per PIA</b>
1998/2001	6	2	0	1 (1)		1.33 (3.0)

*Bracketed figures indicate number of serious and/or fatal accidents*

## Appendix B – Accident Data in vicinity of Metro Stops

Accident statistics for 500 metre radius around proposed tramstops (for period 01/11/97 to 31/10/02)

Proposed Tramstop	Annual number of PIA							Accidents involving motorcyclists	Accidents involving pedal cyclists	Casualties per PIA
	Slight	Serious	Fatal	Accidents involving pedestrians	Accidents involving pedal cyclists	Accidents involving motorcyclists	Casualties per PIA			
B'ham New Rd	1997	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1998	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1999	0	0	0	0	0	0	0	na	1
	2000	1	0	0	0	0	0	0	0	2
	2001	2	0	0	0	1	0	0	0	na
	2002	0	0	0	0	0	0	0	0	na
Tipton Rd	1997	1	0	0	0	0	0	0	0	2
	1998	0	0	0	0	0	0	0	0	na
	1999	1	0	0	1	1	0	0	0	1
	2000	2	0	0	0	0	0	0	0	1.5
	2001	0	0	0	0	0	0	0	0	na
	2002	3	0	0	1	1	0	1	1	1.3
Station Drive (provisional)	1997	1	0	0	0	0	0	0	0	1
	1998	2	0	0	0	0	0	0	0	1
	1999	5	1	0	0	0	0	0	0	1.6
	2000	5	0	0	2	1	0	0	0	1.4
	2001	15	0	0	0	0	0	2	2	1
	2002	11	0	0	2	2	0	0	0	1
Castle Hill/ Trindle Rd	1997	1	0	0	1	1	0	0	0	1
	1998	13	3	1	5(1)	5(1)	0	0	0	1.24

1999	16	0	0	5			1.44
2000	16	4	0	8 (2)	1		1.35
2001	6	1	0	1 (1)		1	1.43
2002	9	0	1	3 (1)		1	1.1
King Street, Dudley	1997	0	0	0			na
	1998	1	1	1 (1)	1		1
	1999	7	0	1			1.14
	2000	8	0	5 (1)			1.22
	2001	1	0	0 (1)			1
	2002	3	2	1 (1)	1		1.2
Flood Street	1997	0	0	0			na
	1998	1	0	0			2
	1999	0	0	0			na
	2000	2	0	0			2
	2001	3	0	0			1.67
	2002	5	0	1			1.2
Cinder Bank	1997	1	0	0			2
	1998	14	2	1		1	1.625
	1999	8	0	0			1.5
	2000	11	0	2	1		1.18
	2001	7	1	2		2	1.5
	2002	7	0	0	1		1
Pedmore Road	1997	0	1	0			4
	1998	0	0	0			na
	1999	2	1	0 (1)			1.67
	2000	0	0	0			na



Waterfront Way	2001	0	0	0	0	na
	2002	0	0	0	0	na
Merry Hill	1997	0	0	0	0	na
	1998	0	0	0	0	na
	1999	1	0	1	1	1
	2000	0	0	0	0	na
	2001	3	0	1	1	2.67
	2002	1	0	1	1	2
	1997	2	0	2	2	1
Cottage Street terminus	1998	1	1	0(1)	0(1)	1
	1999	4	1	1	2	1.2
	2000	5	0	2	2	1
	2001	5	2	1(2)	1(2)	1.14
	2002	1	0	0	0	3
	1997	1	0	1	1	1
	1998	6	1	2	2	1
Cottage Street terminus	1999	5	0	3	3	1.2
	2000	12	1	7(1)	7(1)	1.08
	2001	9	1	5(1)	5(1)	1.18
	2002	4	1	3(1)	3(1)	1
	1997	1	0	1	1	1
Cottage Street terminus	1998	6	1	2	2	1
	1999	5	0	3	3	1.2
Cottage Street terminus	2000	12	1	7(1)	7(1)	1.08
	2001	9	1	5(1)	5(1)	1.18
	2002	4	1	3(1)	3(1)	1

ND - No data available

1997 data - data available for period from 01/11/97 to 31/12/97

2002 data - data available for period from 01/01/02 to 31/10/02

Bracketed figures indicate number of serious and/or fatal accidents

# Appendix C– NATA worksheets

**Worksheet 6.2 TEE****Economic Evaluation - Economic Efficiency of the Transport System (TEE):****(£000)**(1998 prices discounted to  
1998 values)

Impact	TOTAL	Metro ex. PT	Metro ex. Car	Non Users (PT & Car)
User benefits				
Travel Time	<b>130500</b>	115140.6	5123	10236.6
Vehicle operating costs	<b>197.4</b>	0	197.4	0
User charges	<b>-68902</b>	-68902	0	0
Construction/maintenance delays	<b>0</b>	0	0	0
NET IMPACT	<b>61795.6</b>	<b>46238.6</b>	<b>5320.4</b>	<b>10236.6</b>
Private Sector Provider Impacts				
Revenue	<b>80351.2</b>	80351.2	0	0
Operating costs	<b>-42450</b>	-42450.4	0	0
Investment costs	<b>-19900</b>	-19899.8	0	0
Grant/subsidy	<b>25483.4</b>	25483.4	0	0
NET IMPACT	<b>43484.4</b>	<b>43484.4</b>	<b>0</b>	<b>0</b>
Public Sector Provider Impacts				
Revenue	<b>0</b>	0	0	0
Operating costs	<b>0</b>	0	0	0
Investment costs	<b>-63384</b>	-63384.2	0	0
NET IMPACT	<b>-63384</b>	<b>-63384.2</b>	<b>0</b>	<b>0</b>
Other Government Impacts				
Grant/subsidy payments	<b>-25483</b>	-25483.4	0	0
Indirect tax revenues	<b>0</b>	0	0	0
NET IMPACT	<b>-25483</b>	<b>-25483.4</b>	<b>0</b>	<b>0</b>
TOTAL				
Net Present Value, NPV	<b>16412.4</b>			
Present Value of Costs, PVC	<b>-125734</b>			
Present Value of Cost to Government	<b>-88867.6</b>			
Benefit/Cost Ratio, BCR	<b>1.131</b>			
Value/Cost to Gov't Ratio, VCGR	<b>0.185</b>			

## Accessibility: Access to the Transport System

Aspect of PT System	Do Minimum Quality Score	Do Something Quality Score	Assessment of Change
Service Frequency (> 1per hr)	Moderate	Moderate	None
Ease of finding Seat	Moderate	Moderate	None
Affordability (Fare Price)	Moderate	Moderate	None
Availability of Direct services	Moderate	Moderate	None
Quality of Interchanging facilities	Moderate	High	Slight Positive.
Travel Information	Poor	High	Moderate Positive.
Ease of Access - Walking	Moderate	High	Slight Positive.
Ease of Access - onto vehicle	Moderate	High	Slight Positive.
Level of Comfort - Vehicle	Moderate	Moderate	None
Level of Comfort - Wait Environment	Poor	High	Moderate Positive.

**Summary Assessment Score: Moderate Positive**Disabilities

8.4% of Dudley district's population experience some form of physical and/or sensory disability<sup>1</sup>.

Car Ownership

31% of households within Dudley District are carless.

Age of Population

The population of Sandwell is 282,901 with 38.1% of the population being under the age of 16 or above the age of 65.

The population of Dudley Borough is 305,164 with 36.5% of the population being under the age of 16 or above the age of 65.

Education

Dudley MBC district has 49.6% of 15 year olds gained 5 or more A\* - C grade GCSE/GNVQ in 2001.

73% of 17 year olds in Dudley were involved in education or training in 2001 of which 83.7% achieved advanced level qualifications.

Employment

Economically active individuals within Dudley District are 2% higher than the national average (62.9%). This has implications for the highway network through the demand for work related movements.

In April 2002, 95.7% of people in Dudley Borough were in employment.

Skilled manual workers are the largest proportion of the economically active in the Dudley District – around 40%<sup>1</sup>.

#### **Qualitative Comments:**

##### Service Frequency (> 1per hr)

The development of the metro line from Wednesbury to Brierley Hill is unlikely to alter the frequency of bus services around the route.

##### Ease of finding Seat

The new metro line will have no effect on ease of finding a seat.

##### Affordability (Fare Price)

The price of a fare is unlikely to change as a result of the new metro line.

##### Availability of Direct services

The opening of the new metro line will not influence the availability of direct bus services.

##### Quality of Interchange facilities

Interchange facilities will be improved between walking and bus as a result of improved crossing facilities and security. Bus to bus interchange will be encouraged through improved information, easier access and the development of Dudley bus station. A new possibility for interchange between bus and metro will be created following the completion of the metro line.

##### Travel Information

Bus travel information is likely to improve in order to facilitate interchange between bus and metro and bus-bus interchange.

##### Ease of Access – Walking

Walking to bus stops will be improved at a number of locations as a result of new or improved crossing facilities across the metro line. The improvements will include:

- Improved crossing facilities in and around Brierley Hill to provide access to bus services to many parts of the Black Country and Birmingham.
- Improved lighting and crossing facilities around the Cinder Bank island offering improved access to the 243, 245, 247/A, 248/A, 249, 264, 265 and 545 services to Dudley, Cradley Heath, Halesowen, and Stourbridge passing along Blowers Green Road.
- Improved street level crossing around the Flood St stop will provide improved access to bus routes along the nearby King St.
- A remodeling of Dudley bus station in addition to enhanced crossing facilities in the area will ensure access to the Dudley bus Terminus will be improved.
- In order to ensure that access to the important Tipton Road bus route is unproblematic, improved crossing facilities are to be created.
- Improved access around Dudley Port to the frequent bus services to West Bromwich, Birmingham and Tipton.

##### Ease of Access - onto vehicle

Within the Do Something scenario it is expected that bus stops near a metro station will be improved to incorporate raised paving to provide easy access onto buses and better lighting to increase safety and security.

Level of Comfort – Vehicle

The introduction of the new metro line will have no effect on the level of comfort experienced by passengers on buses in the area.

Level of Comfort - Wait Environment

Bus stops near to metro stations will include seating within a covered waiting environment. The enhancement of Dudley bus station will improve the level of comfort for all passengers using the facility.

Assessment of the Change in quality of Transport Components:

Do Minimum Quality Score	Do Something Quality Score			
	High	Moderate	Poor	Very Poor
High	None	Slight negative	Moderate negative	Large negative
Moderate	Slight positive	None	Slight negative	Moderate negative
Poor	Moderate positive	Slight positive	None	Slight negative
Very Poor	Large positive	Moderate positive	Slight positive	None

Location	Potential Effect on Non-User Accidents	Mitigation
<b>Whole Corridor</b>	Pedestrian crossing facilities will be provided at Metro Stops with high levels of access by foot and cycle. This safety improvement will benefit pedestrian/cyclists within the location and bus users accessing bus/metro interchanges.	
<b>Dudley Town Centre</b>		
Castle Hill/Trindle Road	The central on street running of the metro here has implications for increased conflicts between trams/buses/cars/ pedestrians.	Clear signage and high visibility running. High visibility at grade crossing facilities along Castle Hill.
Castle Hill	Currently very congested, with a high accident record. Tram movements on Castle Hill could increase the potential for accidents involving non- users.	Buses are to be re-routed along Trindle Road, reducing the potential for conflict.
Trindle Road	Re-routing buses to Trindle Road could increase conflict between cars pedestrians and buses, (effecting non-metro users).	High visibility at grade crossing facilities.
King street	The demolition of the footbridge meaning pedestrians will have to cross at grade, combined with trams using this route (currently a bus lane could increase the likelihood of conflict/ accidents.	At grade crossing facilities will be provided to replace the footbridge in King Street, this will offset potential increases in accidents.
King Street / Flood street	The metro passing through this junction will add complexity and increase the likelihood of conflict with non-metro users.	High visibility at grade crossing facilities and clear signed junction.
<b>Brierley Hill</b>		
Level Street/ Embankment	The introduction of the metro at this junction will increase it's complexity and subsequently the likelihood of accidents involving non-users	High visibility at grade crossing facilities and clear signed junction.
Five Ways	Improvements to crossing facilities across this road (heading to the new metro stop) will also assist non-metro users to cross this busy junction. This will reduce the high accident record currently experienced at this location.	
<b>Other Locations</b>		
Golds Hill	Linkages created to assist pedestrian access to the tram stop here will also help improve the safety of movements for non- metro users.	
Black Country New Road	Pedestrian/cycle linkages to be created, with non-metro users benefiting from the creation of a footbridge over the metro line and Black Country New Road, hence improving safety at this point.	

#### Impact upon accident levels for non- metro users.

There will be a mix of impacts upon accidents involving non- users as a result of the metro's introduction from Wednesbury to Brierley Hill.

The metro will help to provide increases in safety at a number of junctions, which currently experience high pedestrian accidents (e.g. Five Ways), but at the same time will increase the complexity of some existing junctions (on street, e.g. Level

Street/ Embankment), heightening the possibility of conflict with cars, pedestrians and bus users.

Mitigation of potential effects will be incorporated in the proposals for the metro route (e.g. safer and high visibility pedestrian crossing facilities), which will produce an overall decrease in accidents for non-metro users.

The introduction of the metro will produce modal shift, taking car traffic from the road network - particularly travelling along the route between Wednesbury and Brierley Hill. This will reduce the potential for conflict/ accidents involving non-users.

Accident saving as a result of car abstraction from the highway network to the Metro Extension has been calculated by MVA. The total financial value of accident savings over a 30 year appraisal period is **£3.09**.

**Overall Assessment Score: Moderate Positive**

**METHODOLOGY FOR THE ACCIDENT CALCULATION HAS NOT YET BEEN OBTAINED FROM MVA.**

Sources:

GOMMMS (DETR- May 2000).

Midland Metro Future Routes Study- Birmingham City Centre Tramway and Wednesbury to Brierley Hill Extension, Evaluation Report. August 2000.



**OPTION VALUES: FOR NON-USERS.**

No quantitative assessment of the effect of the metro's implementation on non-user option values has been conducted, however a qualitative conclusion has been made.

Improvements to crossing facilities at Five Ways, may help people with mobility difficulties to access areas which they were previously unable to.

- Black Country New Road:  
The provision of pedestrian/ cycle linkages from Bagnall Street and the construction of a footbridge over the tramway/ Black Country New Road, will assist movement and may encourage infirm non-metro users to access areas they were previously unable to.
- It is likely that there will be new bus stops/ services at the metro stations. Non –users may benefit from this, with stops being closer to their homes, allowing them to access new locations, or travel to current destinations by a different mode.
- Non-users will also benefit from proposals to improve Dudley bus station. Improved interchange facilities may encourage more people to use bus services, or allow people to access new locations, by providing better information etc.
- Bus service that run parallel to the new Metro extension alignment may witness a substantial abstraction of patronage to Metro. If service becomes non-financially viable the frequency may be reduced or stoped.

Overall option values for non-metro users will increase as a result of the metro's introduction from Wednesday to Brierley Hill.

**OVERALL ASSESSMENT SCORE: NEUTRAL**