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+HDOWK \$QG :HOOEHLQJ 7RRONLW  
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:ULWWHQ E\ 6XVWUDQV ZLWK VXSSRUW IURP 'U \$GULDQ 'DYLW 7KH

# About Sustrans

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Sustrans is the charity making it easier for people to walk and cycle.

We are engineers and educators, experts and advocates. We connect people and places, create liveable neighbourhoods, transform the school run and deliver a happier, healthier commute.

6XVWUDQV ZRUNV LQ SDUWQHUVKLS EULQJLQJ SHRSOH WRJHWKH  
We make the case for walking and cycling by using robust evidence and showing what can be done.

We are grounded in communities and believe that grassroots support combined with political leadership drives real change, fast.

Join us on our journey. [www.sustrans.org.uk](http://www.sustrans.org.uk)

+HDG 2IÀFH  
Sustrans  
2 Cathedral Square  
College Green  
Bristol  
BS1 5DD

© Sustrans 201  
5HJLVWHUHG &KDULW\ 1R (QJODQG DQG :DOHV 6& 6FRWODQG  
VAT Registration No. 416740656

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# 7KLV LV WKH VHFRQG SDUW RI WKH \$FWLYH 7UDYHO in Improving Health.

7KH \$FWLYH 7UDYHO WRRONLWV DLP WR KHOS / (3V DQG GHOLYHU\ SDUWQHUV WR

'HYHORS \RXU EXVLQHVV FDVH IRU LQYHVWPHQW LQ ZDORU /LQN ZDONLQJ DQG F\FOLQJ VFKHPHV WR \RXU VWUDWHJ

7RRONLW 3DUW ,PSURYLQJ DLU TXDOLW\ E\ ZDONLQJ DQG F\FOLC +HDOWK \$QG :HOOEHLQJ 7RRONLW \$FWLYH 7UDYHO 7RROER[

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# Table of contents

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05	The impacts of poor air quality on human health
05	What is air pollution?
06	How does air pollution damage health?
07	The benefits of modal shift to sustainable transport for short trips
07	: K\ IRFXV RQ VKRUW WULSV"
07	How can we encourage modal shift?
08	Avoid
08	Shift
13	Improve
14	Acknowledgements
15	References

# 1. The impacts of poor air quality on human health

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:ULWWHQ E\ 6XVWUDQV ZLWK VXSSRUW IURP 'U \$GULDQ 'DYLW 7KH

## 1.2. How does air pollution damage health?

Air pollution is damaging our environment and our health. Up to 40,000 early deaths

DUH DWWULEXWDEOH WR DLU SROOXWLRQ HDFK \HDU LQ WKH 8. D for 80% of the pollution where legal limits are being broken.<sup>2</sup>

\$LU SROOXWLRQ KDV D QXPEHU RI KHDOWK FRQVHTXHQFHV DQG IRU VRPH GHPRJUDSKLF JURXSV

- \$LU SROOXWLRQ KDV EHHQ OLQNHG WR FDQFHU DVWKPD VWU GLVHVVH GLDEHWHV REHVLW\ DQG FKDQJHV OLQNHG WR GH
- \$LU SROOXWLRQ SDUWLFXODU\ HIIHFWV FKLOGUHQ DQG ROG WKHLU DJH DV ZHOO DV WKRVH ZLWK H[LVWLQJ UHVSLUDWRU\
- \$LU SROOXWLRQ FRQWULEXWHV WR KHDOWK LQHTXDOLWLHV are often in areas with higher levels of pollution or near busy roads and SHRSOH ZKR FDQ DIIRUG WR GR VR WHQG WR FKRRVH WR OLY

5HVHDFK VKRZV WKDW LPSURYHPHQWV LQ DLU TXDOLW\ OHDG WR illness.<sup>5</sup> \$V WKH 5R\DO &ROOHJH RI 3K\VLFLDQV KDV QRWHG KRZHYHU FRQWUROOLQJ XUEDQ DLU SROOXWLRQ WKURXJK WHFKQLFDO PHD SURYLGHV OHVV EHQHÀW IRU SXEOLF KHDOWK WKDQ IRFXVLQJ RQ VXVWDLQDEOH WUDQVSRUW DFWLYH WUDYHO DQG SXEOLF WUDQ part of the journey).<sup>6</sup> ,W LV KRZHYHU LPSRUWDQW WR UHDOLVH WKDW XQOE E\ WKH VKLIW WR DFWLYH WUDYHO LV UHPRYHG IURP XVH E\ WKH GXH WR UHOHDVH RI VXSSUHVVHG GHPDQG IRU UHORFDWLRQ

:KHQ ZHLJKLQJ ORQJ WHUP KHDOWK EHQHÀWV IURP SK\VLFDQ DFW IURP LQFUHDVHG H[SRVXUH WR DLU SROOXWLRQ UHVHDFK ÀQGV ZDONLQJ LV FOHDUO\ MXVWLÀHG V\QV\QV DDOÀR ERQDENLQJ RZQ WKDW VWXGLHV KDYH VXJJHVVHG SHRSOH LQ YHKLFOHV FDQ H[SH SROOXWLRQ WKDQ ZDONLQJ RU F\FOLQJ LQ WKH VDPH HQYLURQPH

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7RRONLW 3DUW ,PSURYLQJ DLU TXDOLW\ E\ ZDONLQJ DQG F\FOLC +HDOWK \$QG :HOOEHLQJ 7RRONLW \$FWH 7UDYHO 7RROER[

:ULWWHQ E\ 6XVWUDQV ZLWK VXSSRUW IURP 'U \$GULDQ 'DYLV 7KH

## 2. The benefits of modal shift to sustainable transport for short trips

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## 3. How can we encourage modal shift?

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+HDOWK \$QG :HOOEHLQJ 7RRONLW  
\$FWH 7UDYHO 7RROER[

:ULWWHQ E\ 6XVWUDQV ZLWK VXSSRUW IURP 'U \$GULDQ 'DYLW 7KH

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7RRONLW 3DUW ,PSURYLQJ DLU TXDOLW\ E\ ZDONLQJ DQG F\FOLC  
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\$FWH 7UDYHO 7RROER[

:ULWWHQ E\ 6XVWUDQV ZLWK VXSSRUW IURP 'U \$GULDQ 'DYLW 7KH



7UDQVSRUW IXQGHG 6XVWDLQDEOH 7UDYHO 7RZQV SURMHFW IRU  
VLJQLÀFDQW VKLIW IURP FDU WR PRUH VXVWDLQDEOH PRGHV LQF  
bus use.<sup>19</sup>



7RRONLW 3DUW ,PSURYLQJ DLU TXDOLW\ E\ ZDONLQJ DQG F\FOLC  
+HDOWK \$QG :HOOEHLQJ 7RRONLW  
\$FWH 7UDYHO 7RROER[  
:ULWWHQ E\ 6XVWUDQV ZLWK VXSSRUW IURP 'U \$GULDQ 'DYLW 7KH

HVWLDPDWHG WR GURS E\ PLFURJUDPV SHU P GXULQJ WKH WU  
HVWLDPDWH WKDW WKLW UHGXFWRQ ZRXOG DYRLG SUHPDWXUH  
WKHVH ÀJXUHV ZLWK WUDIÀF DFFLGHQW GDWD WKH WRWDO QXPE  
DFFLGHQWV LQ WKH 6WRFNKROP UHJLRQ KDV DYHUDJHG DW SHU  
2008.

7KH VWXG\ GHPRQVWUDWHV WKDW HYHQ PRGHVW LPSURYHPHQWV  
KHDOWK EHQHÀWV DQG WKH UHVHDUFKHUV DUJXH WKDW LW LV LI  
HVWLDPDWHV RI KHDOWK LPSDFWV LQ RUGHU WR MXVWLI\ DFWLRQV

7KH 6WRFNKROP FLW\ FRQJHVWLRQ FKDUJH KDV QRZ EFRPH SHU  
VXFFHVVIXO DQG SRSXODU HYHU\ \HDU \$ QHZ VWXG\ VKRZV WKDW  
RI WKH FRQJHVWLRQ FKDUJH LQ RYHUDOO PRWRU WUDIÀF OH  
ZLWK QR ULVH LQ OHYHOV UHSRUWHG RQ URDGV MXVW RXWVL  
WKH FRQJHVWLRQ FKDUJH ZDV VXSSRUWHG E\ RQO\ RI WKH FLV  
DFFHSWDQFH ZDV XS WR

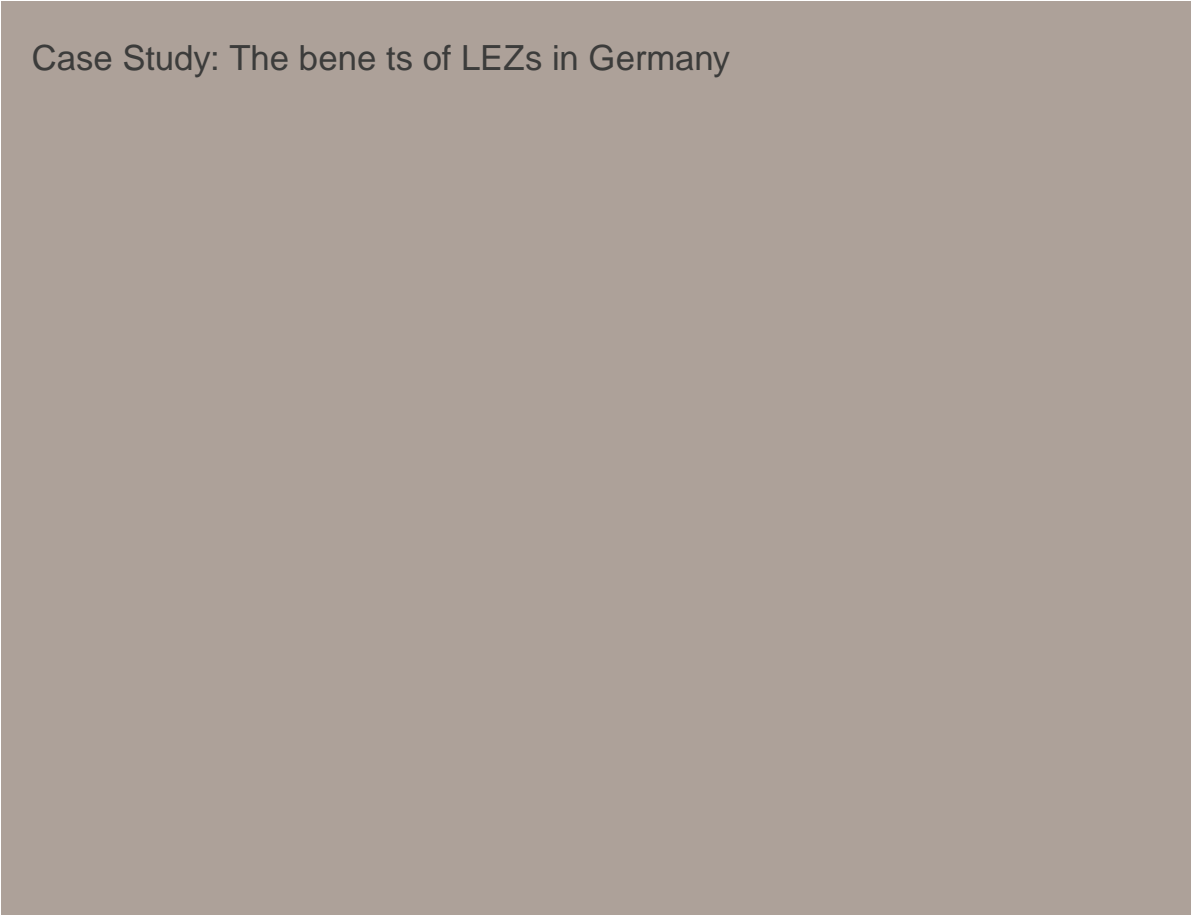
Low Emission Zones

\$ ORZ HPLVVLRQ JRQH /(= DOVR NQRZQ DV D &OHDQ \$LU =RQH L  
DFFHVV E\ FHUWDLQ SROOXWLQJ YHKLFOHV LV UHVWULFWHG RU G  
WKH DLU TXDOLW\ /(=VpP LWWwD HG WR LPUUQP•H DLU TXDOLWPIÈ

7RRONLW 3DUW ,PSURYLQJ DLU TXDOLW\ E\ ZDONLQJ DQG F\FOLC  
+HDOWK \$QG :HOOEHLQJ 7RRONLW  
\$FWH 7UDYHO 7RROER[

:ULWWHQ E\ 6XVWUDQV ZLWK VXSSRUW IURP 'U \$GULDQ 'DYLW 7KH

## Case Study: The benefits of LEZs in Germany



7RRONLW 3DUW ,PSURYLQJ DLU TXDOLW\ E\ ZDONLQJ DQG F\FOLC  
+HDOWK \$QG :HOOEHLQJ 7RRONLW  
\$FWH 7UDYHO 7RROER[

:ULWWHQ E\ 6XVWUDQV ZLWK VXSSRUW IURP 'U \$GULDQ 'DYLW 7KH

7DNHQ WRJHWKHU WKHVH HIIHFWV UHGXFH WKH TXDOLW\ RI OLIH  
XUEDQ DUHDV DQG WKH DWUDFWLYHQHV RI FLWLHV IRU EXVLQJ

7KHUH DUH DOVR DGYDQWDJHV IRU SDUWLFLSDWLQJ UHWDLOHUV  
SURYLGH WKHP ZLWK KLJK YDOXH VHU\LFHV LQ DGGLWLRQ WR WK

- PSURYHG VWDII SURGXFWLYLW\ DQG VDIHW\
- WKH SYLVLRQ RI SUH UHWDLOLQJ VHU\LFHV DQG UHF\FOLQJ R
- FKHFNLQJ FRQVLJQPHQWV IRU EUHDNDJHV

6XSSOLHUV FDQ DOVR EH FOHDU EHQHÀFLDULHV IURP 8)&& VFKHP

- UHGFWLRQ LQ WKH QXPEHU RI YHKLFOHV UHTXLUHG WR GHOL  
WR WKH FLW\ FHQWUH VDYLQJ WLPH DQG PRQH\

### Case study: Reducing freight impacts: Bristol Bath Urban Freight Consolidation Centre

An evaluation of the deliveries to Bristol City Centre from the Bristol Bath Urban Freight Consolidation Centre (BBUFCC) demonstrated a reduction of 74% of delivery trips in the city.

6LQFH EXVLQHVVHV LQ %ULVWRO DQG %DWK KDYH EHHQ XVLQJ  
WR PDQDJH WKHLU GHOLYHULHV PRUH HIIHFWLYHO\ WKURXJK WKH  
VHU\LFH LV D SDUWQHUVKLS EHWZHHQ WKH FRXULHU VHU\LFH '+  
%DWK DQG 1RUWK (DVW 6RPHUVHW &RXQFLO

Bristol Bath Urban Freight Consolidation Centre (sourced from Travelwest)

\$Q HYDOXDWLRQ RI WKH GHOLYHULHV WR %ULVWRO &LW\ &HQWUH  
-DQXDU\ DQG 0D\ VKRZHG WKDW

- IRU HYHU\ +HDY\ \*RRGV 9HKLFOH GHOLYHULHV WR WKH )UH

7RRONLW 3DUW ,PSURYLQJ DLU TXDOLW\ E\ ZDONLQJ DQG F\FOLC  
+HDOWK \$QG :HOOEHLQJ 7RRONLW  
\$FWH 7UDYHO 7RROER[

:ULWWHQ E\ 6XVWUDQV ZLWK VXSSRUW IURP 'U \$GULDQ 'DYLV 7KH

&RQVROLGDWLRQ FHQWUH RQ FRQVROLGDWHG GLVWULEXWL  
QHFHVVDU\ 7KLV HTXDWHV WR RI WKH GHOLYHU\ PRYHPHQ  
DOWRJHWKHU DQG WKH RWKHUV PDGH ZLWK D VPDOOHU FOHD

- GHOLYHULHV WR %DWK FLW\ FHQWUH IURP WKH %%8)&& VKRZH  
EHQHÀW IRU WKH IUHLJKW RSHUDWRUV LQ WHUPV RI IXHO FRV
- D KHDWK EHQHÀW WR WKH ZLGHU SXEOLF LQ WHUPV RI UHGXF

7KH %%8)&& KDV SURYHQ WR EH D VHUYLFH YDOXHG E\ LWV PRUH  
KRZHYHU HQFRXUDJLQJ ZLGHU SDUWLFLSDWLRQ KDV UHTXLUHG V  
UHVXOWV ,Q DGGLWLRQ WKH RSHUDWLRQ RI WKH %%8)&& UHTXLU

### 3.3 Improve

,PSURYLQJ WHFKQRORJ\ DOVR KDV DQ LPSRUWDQW SDUW WR SOD  
LPSURYH DLU TXDOLW\ IURP YHKLFOHV LQ FLWLHV DFURVV (QJOD  
KRZHYHU WKDW WKHUH DUH IHZHU FR EHQHÀWV IURP WKLV DSSUR  
UHDOLVH IRU H[DPSOH LPSURYLQJ KHDOWK DQG UHGXFHQJ FRQJH  
2QH H[DPSOH LV WKH (XURSHDQ (&267\$5V VFKHPH

#### Case Study: Edinburgh ECOSTARS

The City of Edinburgh is using the ECOSTARS scheme to incentivise and support  
fleet operators in the city to improve environmental performance including air quality.

(&267\$56 LV D (XURSHDQ VWDQGDUG DGPLQLVWHUHG E\ ORFDO DX  
RSHUDWRUV FDQ DSSO\ WR )OHHW RSHUDWRUV UHFHLYH WDLORU  
HQYLURQPHQWDO SHUIRUPDQFH DQG PXVW PHHW FULWHULD WR U  
standard.

\$OO (&267\$56 VFKHPHV DFURVV (XURSH DSSO\ FRPPRQ VFKHPH VW  
are based on engine EURO standards plus alternative fuels use and operational  
HQKDQFHPHQW 7KLV DOORZV QDWLRQDO FRPSDQLHV WR EH D PH  
(GLQEXUJK DQG WKH VL[ RWKHU 8. (&267\$56 VFKHPHV FXUUHQWO\

\$ORQJ ZLWK RWKHU FRXQFLOV LQ WKH 8. (GLQEXUJK KDV DLU TX  
\$ VLJQLÀFDQW SURSRUWLRQ RI SROOXWLRQ LQ (GLQEXUJK RULJLQ  
URDG YHKLFOHV 7KLV OHG (GLQEXUJK &RXQFLO WR VHW XS WKH  
ECOSTARS.

(&267\$56 (GLQEXUJK UDWHV YHKLFOHV DQG RSHUDWLQJ SUDFWLFH  
WR UHFRJQLVH OHYHOV RI HQYLURQPHQWDO DQG HQHUJ\ VDYLQJ  
WKHQ UHFHLYH WDLORU PDGH VXSSRUW WR HQVXUH WKH ÁHHW LV  
HFRQRPLFDOO\ DV SRVVLEOH DQG WR KHOS WKHP SURJUHVV WR  
VFKHPH

(&267\$56 SURYLGHV WKH FLW\ ZLWK D PHWKRG RI HQJDJHPHQW ZL  
DQG SDVVHQJHU ÁHHWV RI +\*9V EXVHV FRDFKHV DQG YDQV 7KH  
PRUH HIÀFLHQW DQG FOHDQHU IUHLJKW DQG SDVVHQJHU WUDQVS

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:ULWWHQ E\ 6XVWUDQV ZLWK VXSSRUW IURP 'U \$GULDQ 'DYLV 7KH

JXLGDQFH DQG DGYLFH WR RSHUDWRUV

ÁHHW RSHUDWRUV KDYH EHHQ UHFUXLWHG ZLWKLO WKH ÁUVW  
7KLV WUDQVODWHV WR RYHU UHJLVWHUHG YHKLFOHV 0HPEHU  
VHFWRUV LQFOXGLQJ IUHLJKW DQG SDVVHQJHU WUDQVSRUW DOW

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7RRONLW 3DUW ,PSURYLQJ DLU TXDOLW\ E\ ZDONLQJ DQG F\FOLC  
+HDWK \$QG :HOOEHLQJ 7RRONLW  
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# 5. References

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22. E




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