MetroCount®

Traffic Data Specialists

Bicycle Survey Systems
Advanced Cyclist Data Capture and Analysis

{ Bicycle Monitoring }

The benefits of cycling in cities are well established. The pressing task for transport managers is to apply this knowledge to achieve better bicycle infrastructure and increase cyclist participation. Modelling bicycle traffic is at the heart of effective cost benefit analysis to justify improved cycle infrastructure and increased funding. MetroCount's unique axle detection technology has been proven to produce accuracy of better than 99% in normal flow conditions. Verified by independent studies, MetroCount bike survey systems provide accurate information for every bike including speed, direction, headway, length, and more. Summary data can identify the daily, weekly or monthly volumes, peak usage times, flow rates and congestion. Year-on-year data can also help to analyse growth patterns and the successful uptake of new infrastructure.

Experience and Reliability

With over 10 years of development behind our bicycle monitoring equipment, the reliability and quality that have become MetroCount's point of difference are evident in our bicycle counters. With a multitude of installed bicycle monitoring sites currently surveying traffic 24 hours a day, MetroCount is leading the industry in detailed bike traffic information.

Working with the Best

The Netherlands is globally revered for their integrated bike infrastructure transport network, with enviable bike usage statistics highlighting the effect of a focus on multimodal transport. MetroCount continue to work closely with the world's leading bike infrastructure proponents to deliver products that meets the demands of Dutch traffic engineers.

Modelling bicycle traffic is at the heart of effective cost benefit analysis to justify improved cycle infrastructure and increase funding.

With precision above 99% in a recent study, MetroCount piezoelectric bike sensors lead the industry for accuracy and available depth of analysis. MC5720's are helping to analyse bike traffic on the London bike highway.
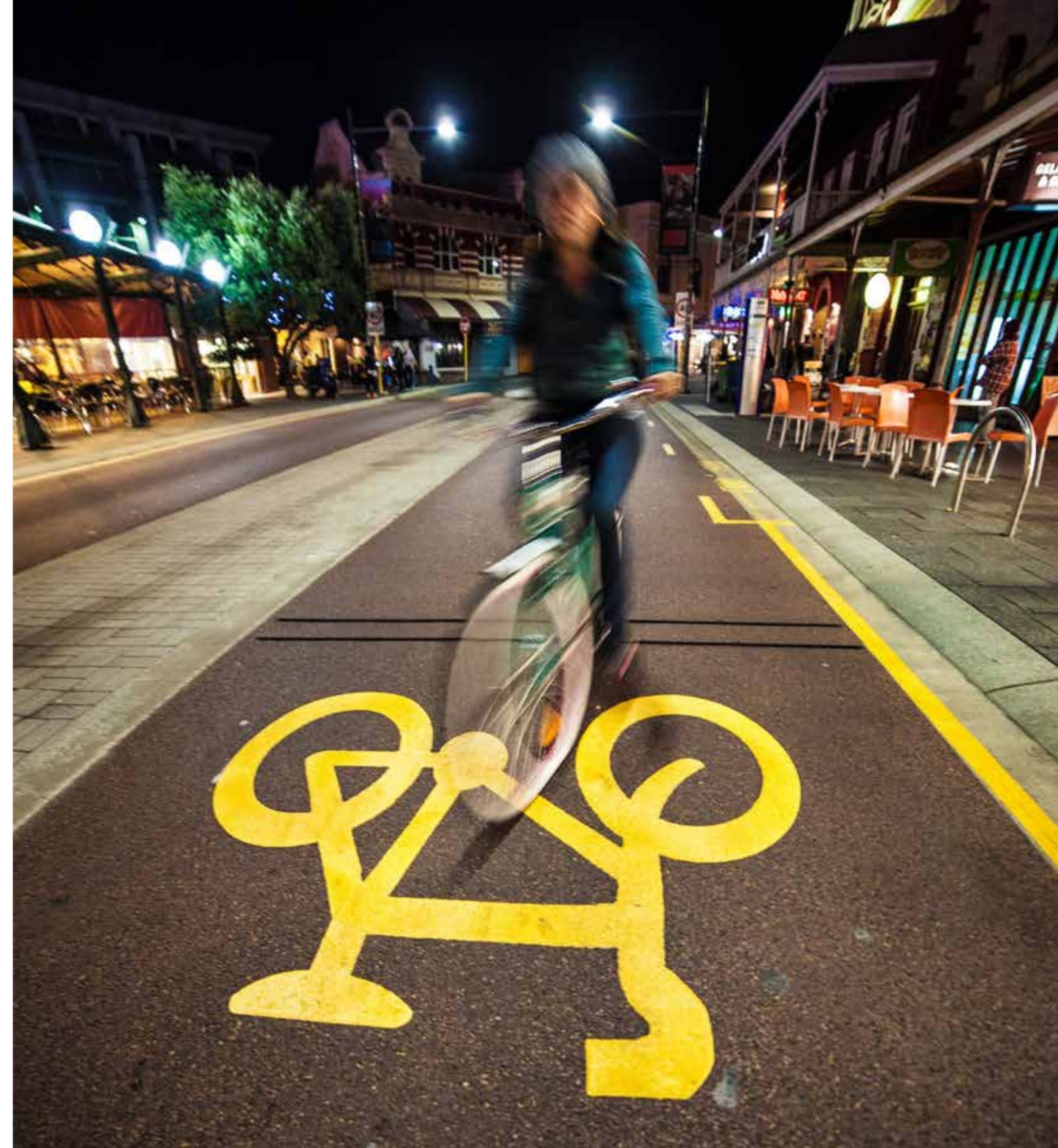
" *With continual commitment and investment in promoting, facilitating and encouraging cycling within the Borough, monitoring cycling journey traffic is essential. As a result the permanent bike counters we have located across the borough pay for themselves.* "

Nick Davies, *Principal Transport Officer, London Borough of Barking and Dagenham*

MetroCount Bike Counter Systems

Record Every Axle

Based on the same time-stamping technology as MetroCount's other vehicle classifiers, MetroCount bike systems record every bike axle that passes over the sensors. Processing axle information in software post-survey allows non-bike sensor hits that fall outside of the pattern of a bicycle to be excluded from the data. This technology allows for highly accurate detection and analysis of bike traffic.

True Direction Detection

With detailed axle data MTE is able to determine accurate direction of travel, providing useful details of bike flows.

Weatherproof

MetroCount Bike Classifier systems are fully weather resistant. Gore-Tex breathable vents prevent moisture from entering the units while allowing pressure equalization.

Count In A Cluster

With cyclists often traveling in clusters, MTE data analysis algorithms effectively distinguish varying patterns of bicycle grouping. This information can be analyzed in the MTE software, providing useful information about the patterns of cycling in an area.

Speed Information

Monitoring the speed and headway of bike paths can help to identify potential hazards. Filtering volumes by speed and direction provides a visualization of conditions during peak and off-peak cycling periods helping to identify cycling modes.
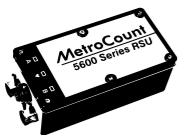
MC5620 Portable Bike Classifier

Move with the Traffic

The MC5620 makes portable bike monitoring easy and familiar with the use of two thin-walled pneumatic tubes. Installation of the MC5620 is similar to the universally used MC5600. The simplicity of installation, and high degree of accuracy, make the MC5620 an essential part of the traffic manager's response toolkit.

The MC5620 is optimized for accurate monitoring of both dedicated bike paths and bike lanes in mixed traffic(providing there is reasonable lane discipline).
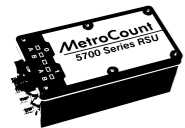
MC5720 Permanent Bike Classifier

Low Profile Sensors

The MC5720 utilizes highly sensitive piezoelectric sensors embedded into the pavement. The sensors detect the precise time each bicycle wheel crosses over the sensor.

Count Anywhere

With long-lasting batteries and the option to access data remotely with FieldPod, bike monitoring systems can be installed in remote locations.

Discrete Cabinet

For permanent bike monitoring, MetroCount's discreet roadside cabinet is engineered for longevity. Weatherproof construction ensures equipment is protected from the elements.

Technical Specifications
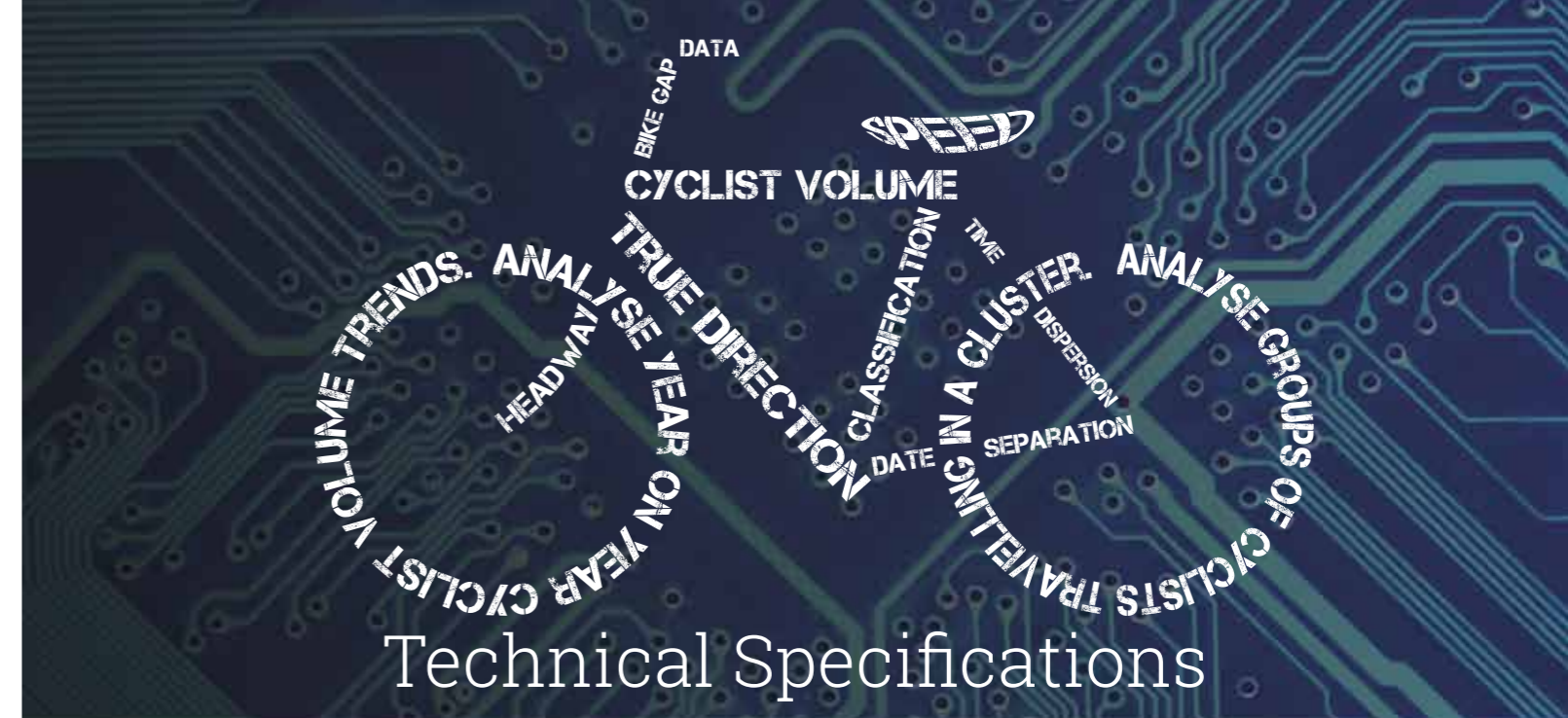
	MC5620	MC5720
Application	Portable bike survey with dual pneumatic rubber tubes, on both bike paths and on-road separated cycle lanes.	Permanent cyclist monitoring with dual embedded piezoelectric sensors on bike paths and separated onroad cycle lanes.
Survey Duration	Short term.	Continuous ongoing survey.
Technical Details	**Time resolution:** Better than 1ms. **Operating temperature:** -10°C to 60°C with reduced battery life at temperature extremes. **Operating humidity:** 0 to 95%, non condensing. **Included with MC5620:** Traffic Executive™ software, Operating and reference manual, Data communications cable.	**Time resolution:** Better than 1ms. **Operating temperature:** -10°C to 60°C with reduced battery life at temperature extremes. **Operating humidity:** 0 to 95%, non condensing. **Included with MC5720:** Traffic Executive™ software, Operating and reference manual, Data communications cable.
Required Accesories	Bike Field Kit (Tubes, Nails, Cleats)	Cabinet, piezoelectric strips, site dependent fittings and connectors.

Individual Cycle Recording Capacity

Bicycle Volume	Days (approx.)
4,000 cycles per day	120
2,000 cycles per day	240
1,000 cycles per day	480
500 cycles per day	960

MC5720 - Separated Cycle lane

MC5620 - Dual Pneumatic Tubes

MC5720 - Dedicated Cycle Path

{ MetroCount Traffic Executive® (MTE) }

Since MetroCount was founded in 1987, the same team of engineers have been building the most advanced traffic analysis software available. One team, over 25 years of development. From humble beginnings, to the multinational company of today, the development of MetroCount Traffic Executive has remained customer focused, implementing feedback from road managers to deliver useful traffic information.

Worth Doing the Right Way
Prior to MetroCount, traffic surveying was often regarded as an inexact science. But with proven accuracy above 99%, MetroCount equipment is now the pinnacle of accuracy in presenting cyclist statistics. With thorough error checking on every cycle detection, MTE provides a high degree of accountability in its interpretation.

Quality Control
Ensuring verifiable data quality is one of the key strengths of the MetroCount System. A host of diagnostic reports can be used to determine the data quality both during and post-survey.

Filter with Profiles
MTE uses a report Profile system to allow detailed filtering and reporting of traffic data. Profiles contain information about the filtering of traffic by class, time, speed, direction, separation and more. Profiles can be saved for later use as well as copied and pasted to consistently compare any data sets.

112 Countries and Counting
MTE has been developed for the global market with customisable parameters including language, vehicle classification schemes (with axle graphing), time-zones (with daylight saving) along with a host of other configurable options.

Tablet Operation in the Field
Field operators can take advantage of small form factor Windows tablets with a full sized USB port

when operating MTE. Tablets simplify roadside unit set-up with only a few taps before a unit is running. MTE is developed to operate on computers running a windows operating system.
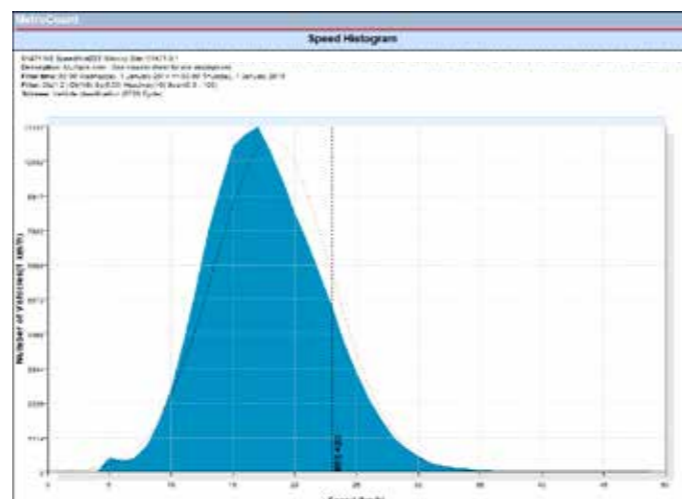
MetroCount's extensive background in traffic data translates into an incredible array of cyclist reports.

Cyclist flow reports build a clear picture of cyclist movements during the day and night.
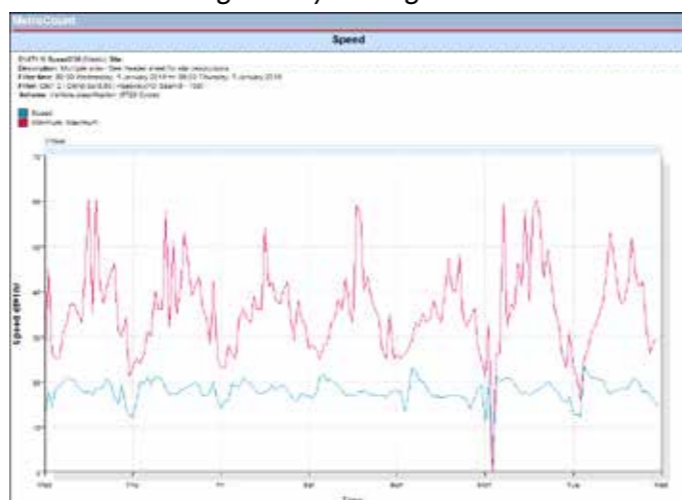
Identifying speed trends at different times of the day highlights cycling conditions.

MTE Features

- Advanced reporting of traffic representations based on accurate classification data.
- Extensive graphical reports with numerous permutations of class, speed, volume and time based plots.
- Metric and non-metric units.
- Multi-lane, multi-data set analysis.
- Count-only features to sum vehicles by axles or gaps.
- Detailed data quality analysis with Trigger Spectrum and noise analysis.

Latest Updates
- Touch-screen support.
- Custom template creation.
- Analyse up to 50 data files from the File Management List.
- Time bars to view dataset range.
- Compass direction and lane number in the Individual Report.
- Time filter auto-wrap to align data to calendar months.
- Advanced site list searching.
- Advanced mapping features for site lists.
- Additional filtering to group by vehicle wheelbase or length.


Cycle Reporting

In addition to the extensive range of reports, MTE provides the ability to export data, allowing traffic managers to easily generate customised plots in third party data visualisation tools (i.e. Excel, Matlab, Web-based Apps).

Yearly Volume Monitoring
Building a clear picture of cycle path volume over time provides strong evidence to justify upgrades and new infrastructure. The MetroCount system captures data consistently to a high degree of accuracy year-round, providing accurate year on year usage statistics. Cycle volume data exported by day of week can present trend information.
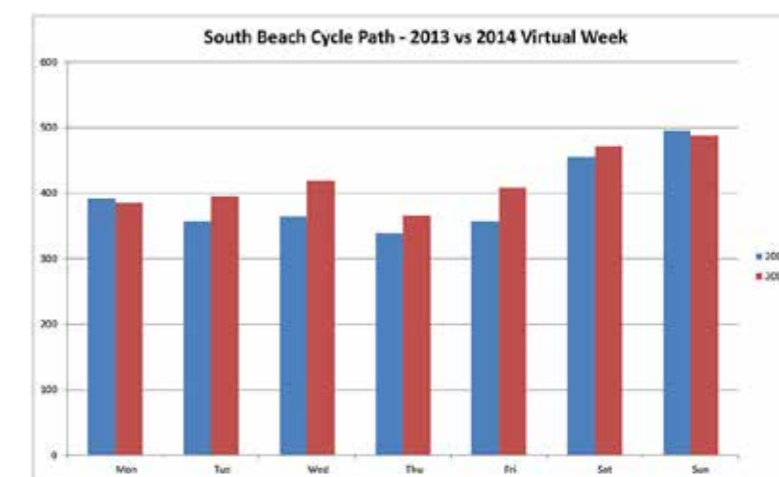
Year-on-year statistics are invaluable for planning infrastructure.

True Cycle Direction Statistics
Understanding the direction of cyclist travel provides critical information about route selection and volumes on a path. Congestion and speed statistics on cycle paths can be better understood through knowing the direction of travel at time intervals.
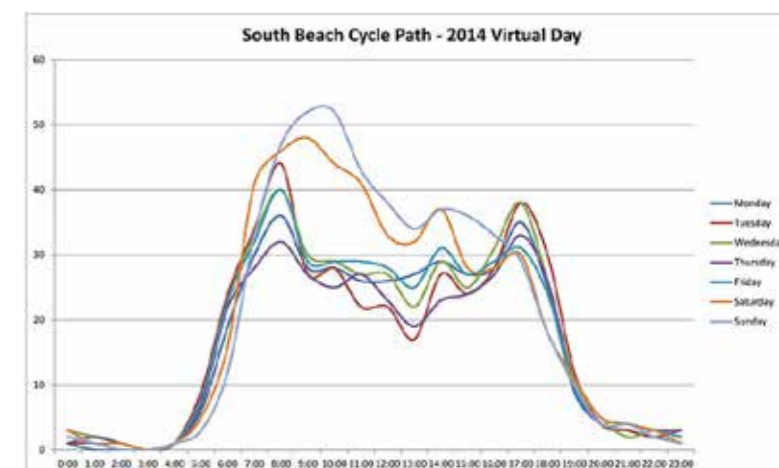
A virtual week is plotted by day to highlight the differences in weekend and week days and view the peak volume periods.

Remote Access Cycle Data

{ Remote Access Cycle Data Collection }

Innovations in the delivery of cyclist data from permanent sites have improved the processes for monitoring and analysing traffic information. Permanent cycle monitoring sites inform logical transportation decision making. Streamlining the flow of information from the cycle way to the end user, MetroCount's FieldPod system enables a direct link between traffic monitoring sites and road managers over the mobile phone network. FieldPod adds the benefits of remote communication to any permanent MetroCount site. MetroCount's FieldPod remote access technologies are the result of continued engagement with traffic professionals around the world to develop traffic survey solutions that improve efficiency and save time.

Eliminate Routine Site Visits
FieldPod enables road managers to monitor sites and receive data remotely, reducing the number of hours spent travelling to monitoring sites to check data.

Mobile Network Accessibility
Connecting to available mobile network infrastructure, FieldPod works anywhere that has available mobile phone access. System diagnostics are run remotely to monitor the site.

Secure but Simple
Designed with simplicity in mind, FieldPod traffic data is securely recorded, stored and transmitted. Traffic data is collected 24 hours a day, seven days a week continuously, while the remote access system sends the data to the end user at routine intervals.

Low Power - Low Maintenance
Employing the same emphasis on low power consumption that has made MetroCount traffic counters so popular, FieldPod has been engineered to operate for long periods of time on battery power. FieldPod sites can be coupled with solar panels to provide power indefinitely in almost all situations. Low power hardware reduces maintenance, costs and emissions.

One FieldPod, Multiple Units
Connect up to two MetroCount classifiers to a single remote access module to monitor multilane sites effectively. For example two MC5720 units can provide detailed bike data for two lanes of traffic through a single remote access module.

Spend Less, Monitor More
FieldPod plans are catered to an organisation's needs, reducing initial outlay for equipment and spreading out the cost of surveys to make traffic survey budgeting predictable long-term.
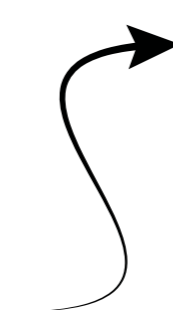
Collect → Transmit → Analyse

FieldPod® Technical Details

Software Interface
Like all MetroCount products, FieldPod® is operated within MTE. Remote access allows operation of road side units in the same manner as a direct connection. Check data quality, unload data, monitor voltage and check the RSU status all without leaving the office.

Compatibility
FieldPod® is compatible with all MetroCount permanent sites with the option to retrofit existing sites with suitable infrastructure. FieldPod® sites can be downloaded and monitored manually if required without any data loss.

Power
With extensive testing, MetroCount remote access sites utilise the best available power source to function long term with minimum maintenance. Remote communications are powered by a secondary battery that can be charged by an optional solar panel flush-mounted on the pedestal cabinet for continuous operation. Road side units run on an internal battery and will continue to record traffic in the event of power failure.
Systems can be configured to take advantage of mains power when available.

Proven Stability
With the benefit of over 5 years field experience, FieldPod is a mature and stable platform. MetroCount can customise the delivery mechanisms to assist managers in building robust traffic data systems.

Network Connection
MetroCount provides custom SIM cards to allow access to the mobile data network worldwide. Organisations can opt to use their own SIM if required.

Data Scheduling
Operators can schedule data to be delivered weekly, monthly or on a custom schedule with files delivered via email or direct FTP. MetroCount also provides the option to access sites and download the data autonomously. For a full end-to-end solution MetroCount can automate the delivery of customised reports.

MetroCount Managed
MetroCount's team of technical specialists are experienced in directing the installation process and managing the work flow from site selection through to installation of equipment.

The Remote Access Module enables two way communication between roadside traffic sites and MTE.

> **With remote access our traffic data simply lands in my email box, it couldn't be easier.**
> **Nick Davies -** *Principal Transport Officer*
> *London Borough of Barking and Dagenham*

MetroCount Product Guide

MC5600 — Portable traffic surveys with rubber tubes. Designed for short term traffic surveys with a wide network coverage.

MC5712 — For traffic surveys synced with traffic lights or rail crossings using rubber tubes and optical fibre(for the signals). Marry traffic data with signal timing.
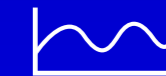
MC5710 — Permanent road surveys with Piezo Electric sensors. Ideal for major roads with heavy flows to provide year round, lane by lane, seasonal data.

MC5740 — Testing unit to analyse Piezo Electric installations.

MC5805 — Permanent vehicle counter for use with a single inductive loop sensor. For use when only a simple count is required on up to 4 lanes.

MC5810 — Permanent vehicle classifier using dual inductive loops. Identify speed, class and volume.

MC5620 — Portable cyclist surveys with rubber tubes. Designed for short term traffic surveys with a wide network coverage.

MC5720 — Permanent cyclist surveys with embedded Piezo Electric sensors. Long term trend analysis.

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