



## Project: Ceredigion – NMWTRA Connectivity Surveys

**Location** Multiple site locations throughout Mid Wales

**Client** **Ceredigion County Council**, on behalf of North & Mid Wales Trunk Road Agency (NMWTRA)

**Date** January 2019 to June 2019

**Category** Highways Drainage Surveys

### Project Summary

**Project Activity:** Pipework and Chamber Defect Survey

#### Summary of Works:

Crown Plus were appointed as Principal Contractor to undertake drainage connectivity surveys on multiple locations on the NMWTRA trunk road network throughout Mid Wales. The trunk roads surveyed were all single carriageway two-way roads in both rural and urban environments.

**Length of Drainage Surveyed:** 68km

**Hours of Works:** Weekday daytime and nighttime working

#### Deliverables:

The final deliverables for the scheme were as follows:

- Electronic footage of all drainage surveys in accordance with IAN147/11
- PDF reports of all surveys together with defect schedules
- Asset Inventory drawings detailing all surface assets (Chambers, Gullies, Kerbs and other surface features)
- Asset condition drawings showing location of defects in each section of drainage
- Design drawings detailing cover levels and all invert levels of incoming/outgoing pipes
- ESRI Compliant shapefiles that met the requirements of IAN147/11 & HD43/04
- Detailed remediation schedules detailing each and every defect identified as part of the surveys together with a recommendation as to how to repair the defect.



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## Full Programme Details

### Nature of the works

The connectivity surveys involved undertaking detailed inspection of the drainage network using Haloptic cameras whilst all the drainage assets were surveyed using GPS equipment. The benefits of undertaking surveys using the Haloptic cameras is that large 'network' wide surveys can be undertaken very quickly compared to traditional CCTV surveys whilst the outputs are very similar.

Pre-cleansing of the drainage system was undertaken as part of the works. To mitigate delays Crown Plus were asked to procure the jetting services directly as an additional service.

### Safe systems of work

As part of the works, Crown Plus were responsible for engaging suitably qualified traffic management company to provide all the traffic management. This programme included all aspects of the road space booking requirements over a total of 12 individual schemes. Special consideration when formulating the traffic management plans had to be given to the main sections of carriageway in and surrounding the busy holiday town of Aberystwyth as they are highly traffic sensitive during the hours of 7:30 – 9:30 and 15:00 - 17:30. Upon review of the sensitivity of the road network we decided to undertake the survey works during night-time working hours so to reduce the impact on local and holiday traffic.

By reference to the pre-construction information provided by the Client, our Contracts Manager prepared a detailed Construction Phase Plan (CPP), detailed Risk Assessments, Method Statement (RAMS) and traffic management plans for the work to be undertaken.

The CPP & RAMS document was formally approved by the Client prior to the works being undertaken. Prior to commencement of the works on site the RAMS were communicated and briefed in detail to all staff and operatives working as part of our works. All personnel confirmed their understanding and confirmation of the details within the documents and signed briefing sheets as confirmation. The briefing sheets were retained within the Health and Safety with copies submitted to the Client's H&S representatives.

Amongst the key risks identified were:

- High speed road with risks to and from the travelling public
- Manual handling
- Confined spaces
- High pressure water

As this project was over several weeks all personnel also received regular toolbox talks on the various elements of the works so to reinforce the main approved methods of working and risks associated with the works. In addition, as the CCTV and Haloptic camera survey works were undertaken in 'mobile works' and the work location changed on a daily basis, daily pre-shift briefings were provided and given by the site supervisor to reinforce the health and safety messages. This ensured everyone knew the tasks for the day and any new or changed working requirements.

All Crown Plus staff and operatives were provided with appropriate PPE for the tasks involved and the environment that they were working in. Spares of all PPE were held on site and distributed as/when necessary. Our supervisor was the 'Appointed Person' for first aid. The Supervisor was responsible for reporting and recording accidents, incidents and near misses. All welfare was provided by the principal contractor.

Traffic management (TM) was arranged by Crown Plus with detailed TM drawings for each phase of the works produced and submitted to the local highway's authority for approval at the time of the road space bookings. The daily pre-shift briefing discussed the TM layout for that day ensuring our teams were aware of access and egress points together with any special requirements.

## Full Programme Details (cont.)

Mobilisation to site only happened, after the briefings had been undertaken, and once the TM had been installed and checked by the TM supervisor. Access and egress to the TM area was only undertaken using the approved points.

The Crown Plus supervisor liaised with the TM contractor daily providing updates on the progress of the surveys relative to the programme of works. This enabled the road space booking teams to liaise closely with the local authority who approved all road space bookings. Any significant delays on site effected the planned programme dramatically as road space bookings would have to be amended, conversely when good progress was made, and we gained time on the programme early entry requests could be made at the appropriate times.

Welfare facilities were provided by way of welfare vans and were provided by Crown Plus.

For this project the following specialist equipment was required:

- GPS surveying equipment
- Haloptic Cameras
- Android based toughpads
- Small tools

Only personnel trained and competent in the use of each piece of equipment was allowed to operate it. All equipment was examined before being taken to site and regular checks were carried out during operations.

Before accessing any part of the drainage system, the relevant covers were removed and allowed to vent. Standard manual handling assessments were used for the lifting of covers.

Each day prior to any works commencing, the survey area was inspected for signs of any protected plant or animal life that may be at risk as a result of the proposed works. On a number of occasions frogs were identified in gullies and chambers and their presence was recorded and reported to the Clients environmental teams.

### Key personnel

The key personnel involved in this project were our:

- Contracts Manager (SMSTS),
- Supervisor (SSSTS),
- Haloptic Camera & GPS operator

### Concluding summary

Crown Plus undertook drainage technical surveys over an extensive area of the NMWTRA trunk road network through mid-Wales with no safety or environmental incidents. This was achieved though close collaboration between NMWTRA, Ceredigion Council, our TM provider and our site management and work teams. In summary the high levels of health and safety were achieved by:

- good planning and preparation
- respecting site rules
- good supervision
- using well maintained equipment
- deploying trained and competent operatives
- collaborating with the Client and supply chain partners