



Northumberland  
County Council

# Tynedale Local Area Council Presentation on Highway Maintenance

November 2022

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[www.northumberland.gov.uk](http://www.northumberland.gov.uk)

# Agenda

- Introductions
- Highway Law
- The Highway Asset
- Asset Management Processes
- Roads Inspection and Repair
- Footways, Bridges, Drainage and Other Assets
- Budgets
- Performance
- Improvement and Innovation

# Introductions

# Highway Law on Maintenance

Why do we do it?

The authority who are for the time being the highway authority for a highway maintainable at the public expense are under a duty... to maintain the highway.

*(Highways Act 1980 – Section 41 (1))*

Special defence in action against a highway authority for damages for non-repair of highway.

- In an action against a highway authority in respect of damage resulting from their failure to maintain a highway maintainable at the public expense it is a defence to prove that the authority had taken such care as in all the circumstances was reasonably required to secure that the part of the highway to which the action relates was not dangerous for traffic.

*(Highways Act 1980 – Section 58 (1))*

# The Highway Asset

- 3200 miles roads
- 1600 miles footways
- 3,500 structures including
  - 1134 bridges
  - 626 culverts
  - 1698 retaining walls
- 51,000 street lights and illuminated signs
- 85,000 gullies
- Drainage, safety fences, verges, trees, etc

# Processes to Manage and Maintain the Asset

- Overarching Transport Asset Management Plan (TAMP)
- TAMP - all asset types – carriageways, structures, footways, lighting, drainage, restraint assets, signs and markings, soft landscaping
- Assets recorded on Highways Inventories
- Highway inspected and defects repaired
- Asset condition assessed
- Maintenance investment programmes developed and implemented

Processes allow effective management and safety of the asset and minimises public liability exposure

# Functional Road Hierarchy

| Hierarchy Category | Hierarchy Name                    | Type of Road General Description   |
|--------------------|-----------------------------------|--|
| 1                  | Major Road Network                | Major Road Network.  |
| 2                  | Resilient Road Network            | Roads that maintain economic activity. Designated by NCC.  |
| 3                  | Main Distributor                  | Main routes linking the (NCC) main towns to the Resilient Road Network.  |
| 4                  | Secondary Distributor             | Routes linking the (NCC) Service Centres to the Main Distributor Network (or higher category road Network).                  |
| 5                  | Major Link Road                   | Roads linking the Main and Secondary Distributor Networks with large villages and residential estates, and industrial areas. |
| 6                  | Minor Link Road                   | Roads linking smaller settlements, travelling through residential estates and industrial area.                               |
| 7                  | Local Access Road (through route) | Roads serving limited numbers of properties but also facilitating travel to other settlements.                               |
| 8                  | Local Access Road (dead end)      | Dead end roads serving limited numbers of properties.  |
| 9                  | Unsurfaced Roads                  | Unsurfaced Roads which are generally unsuitable for normal use.  |



# Road Inspection Frequencies

| <b>Hierarchy Category</b> | <b>Hierarchy Name</b>             | <b>Inspection Frequency</b> |
|---------------------------|-----------------------------------|-----------------------------|
| 1                         | Major Road Network                | Monthly                     |
| 2                         | Resilient Road Network            | Monthly                     |
| 3                         | Main Distributor                  | Monthly                     |
| 4                         | Secondary Distributor             | Monthly                     |
| 5                         | Major Link Road                   | Quarterly                   |
| 6                         | Minor Link Road                   | Six Monthly                 |
| 7                         | Local Access Road (through route) | Annual                      |
| 8                         | Local Access Road (dead end)      | Annual                      |
| 9                         | Unsurfaced Roads                  | None - ad hoc as required   |

# Inspection Processes

- 12 Highway Inspectors across County
- Each have own area of network to cover
- All inspectors undertake training to LANTRA national standard
- Inspections scheduled with reference to different frequencies required based on the network hierarchy.
- All inspection findings recorded
- Works orders issued for defect repairs.
- Works completion recorded

# Third Party Reports of Defects

| <b>Road Category</b> | <b>Name</b>                  | <b>Target for inspecting customer reports</b> |
|----------------------|------------------------------|---|
| 1                    | Major Road Network           | 2 working days                                |
| 2                    | Resilient Road Network       | 2 working days                                |
| 3                    | Main Distributor             | 2 working days                                |
| 4                    | Secondary Distributor        | 2 working days                                |
| 5                    | Major Link                   | 5 working days                                |
| 6                    | Minor Link                   | 5 working days                                |
| 7                    | Local Access (through route) | 5 working days                                |
| 8                    | Local Access (dead end)      | 5 working days                                |
| 9                    | Unsurfaced                   | 15 working days                               |

# Defect assessment and repair response times

- Defects meeting hazardous defect criteria will be repaired
- Intervention Response Times are assessed using a risk-based approach.
- Dependent on
  - Hierarchy Category
  - Position on the highway
- Response times for repair identified
  - 2 hours,
  - next working day,
  - 14 day,
  - 28 day
- Defect repair undertaken and recorded

# Defect responses - Inspection Manual

## 6. Defect Intervention Response Times

| Defect Category |     | Description   | Response Time  |
|-----------------|-----|---|--|
| 1               | 1VH | Defects which are deemed to represent an urgent or imminent serious risk to highway users due to their nature, extent and location, or which may lead to short-term deterioration of the highway network if not repaired.                                   | Repair or make safe within 2 hours   |
|                 | 1H  |   | Repair, or make safe, during the next working day.   |
| 2               | 2H  | Defects, which following a risk assessment, are deemed not to represent an immediate or imminent hazard to highway users, or risk of structural deterioration, but which may still have safety implications but to a lesser degree than Category 1 defects. | Repair within 14 days  |
|                 | 2M  |   | Repair within 28 days  |
|                 | 2L  |   | Based upon the risk of deterioration before the next planned inspection<br><b>Either:</b><br>Include repair as part of planned remedial work if deemed viable<br><b>Or:</b><br>Repair during next available programme<br><b>Or:</b><br>schedule a further inspection to monitor condition<br><b>Or:</b><br>review at next inspection |

|          |                             |
|----------|-----------------------------|
| Asset    | Carriageway                 |
| Defect   | Pothole / spalling          |
| Position | Anywhere within carriageway |

| Extent                                      | Road Hierarchy | Road Speed Limit | Priority Response |
|---|----------------|------------------|-------------------|
| ≥40mm deep and ≥300mm wide in any direction | 1,2,3,4,5,6    | all              | 2(H)              |
|   | 7,8            | all              | 2(M)              |

|  |
|--|
| Comments   |
| Once a depth of 40mm is reached action is required for repair. Potholes are a potential hazard to all road users, not just motorists and any assessment must also consider cyclists and motorcyclists. At formalised / designated pedestrian crossing points the carriageway becomes an extension of the footway, therefore footway intervention levels must prevail at these locations. |

Example(s)



# Reactive Repairs and Customer Complaints

Defects Raised in 2021-22 and Completed Total number **48,729**

- Carriageway Defects Raised April 2021-22 **40,398**
- Footway Defects raised April 2021-22 **8,331**

Third Party Requests Received across the County in 2021-22 **18,652**

Of these **12,836** are carriageway and **3,097** are footway.

**4,115** of these requests created jobs when inspected by the teams.

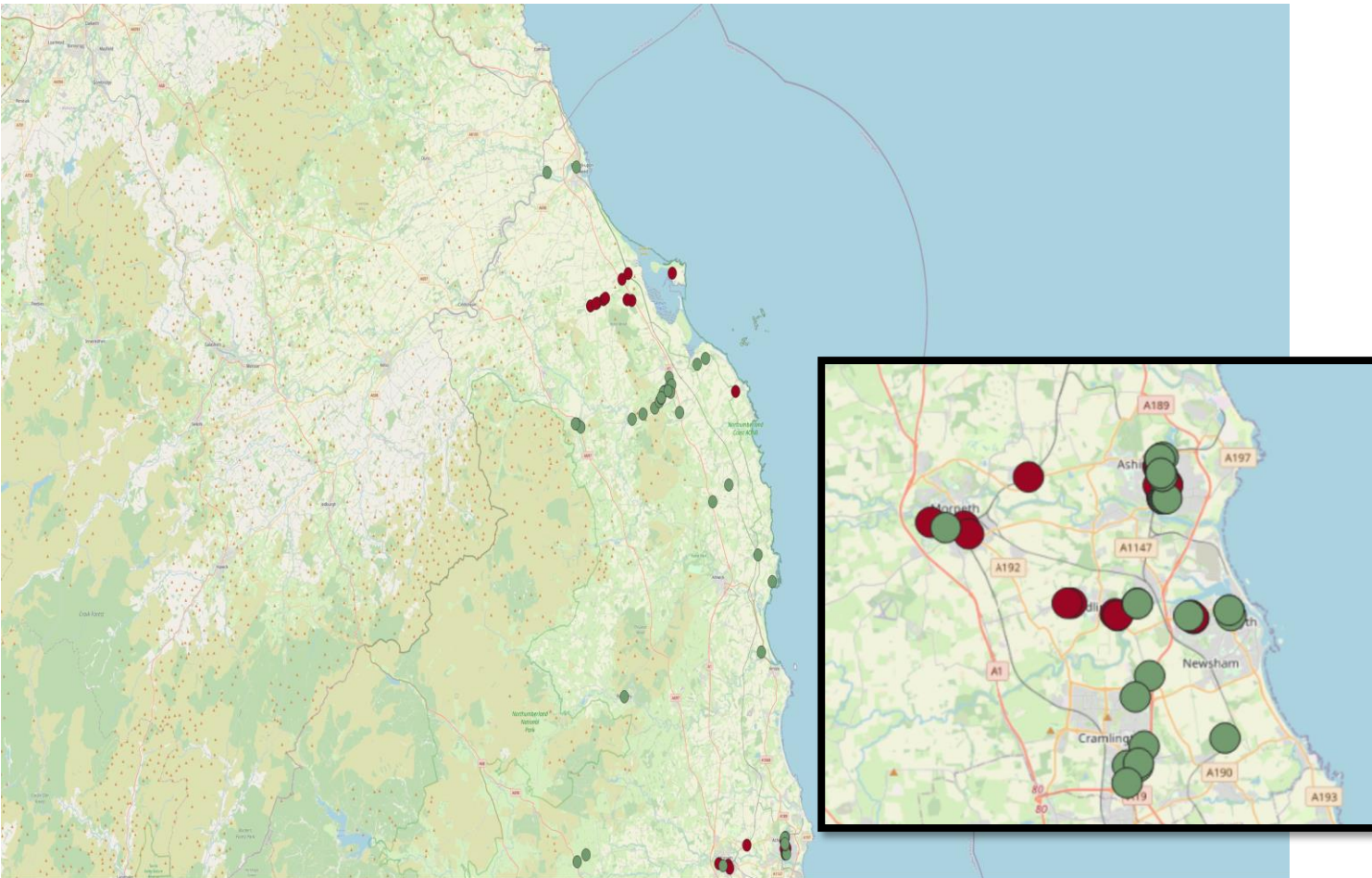
- **754** Footway works created from request.
- **3,118** Carriageway works created from the request.
- **173** on other works

# Repairs

- Individual defect Repair
  - revenue budgets
- Patching
  - capital general maintenance budgets
  - prioritisation of repairs by area teams
  - requires street works permits
  - may require road closures
  - longer lead in times
- Consideration for more major repair
  - passed into LTP Programme Development process
  - reconstruction, resurfacing, major patching, surface dressing, micro surfacing



# Reactive Repairs on the Network



- Daily Snapshot of reactive works
- 99 jobs in a day
- 70 jobs created

Yearly impact on the network.



# Condition Monitoring and Maintenance Programme Development

- Wide range of data captured in PMS Scheme Manager
- Condition data
  - Scanner – machine based inspection of A, B,C roads
  - Coarse Visual Inspection – manual inspection of U roads
- Information from Area Teams and Inspectors
- Third party concerns (Councillors, Parishes, members of the public)
- Programme developed considering hierarchy and condition
- Developing Horizons system – data analysis, treatment choices and modelling of investment scenarios
- Introduced Camera Based asset surveys



# Capital Works Schemes





# Footways and Cycleways



- Functional hierarchy of footways
- Deliver programme of Safety Inspections combined with road inspections
- Respond to safety defects
- Consider patching / larger areas of flag repair
- Larger footway maintenance schemes through LTP programme, inc flags to flex
- Will consider LCWIP outcomes as part of future hierarchy

# Bridges

- Detailed inventory of structures
- Includes 18 ancient monuments and 121 listed structures
- Load carrying capacity assessed and known
- Planned programme of general inspections, with Bridge Condition Indicator scoring for each structure
- Prioritise preventative maintenance
- Assess and manage weight and height restrictions
- Manage public risk from substandard bridges through Interim Measures inspections and strengthening
- Carry out capital works through LTP capital programmes
- Successful DfT Challenge Fund bids for Masonry Arch Refurbishment and Steel Bridge Refurbishment programmes





# Drainage



- Manholes, catchpits, ditches, gullies, filter drains and pipework.
- Deliver programme of maintenance to minimise flooding risk to properties, danger to road users / damage to carriageway
- Cleaning of gulleys
- Four replacement gulley emptiers now in operation
- Improving data collection
- Further review of resources once replacement gulley emptier performance established
- Respond to defects in drains and pipework
- Deliver grip and ditch cutting programme
- Enforce ditch and grip cleaning on private land



# Gully Data/Monitoring

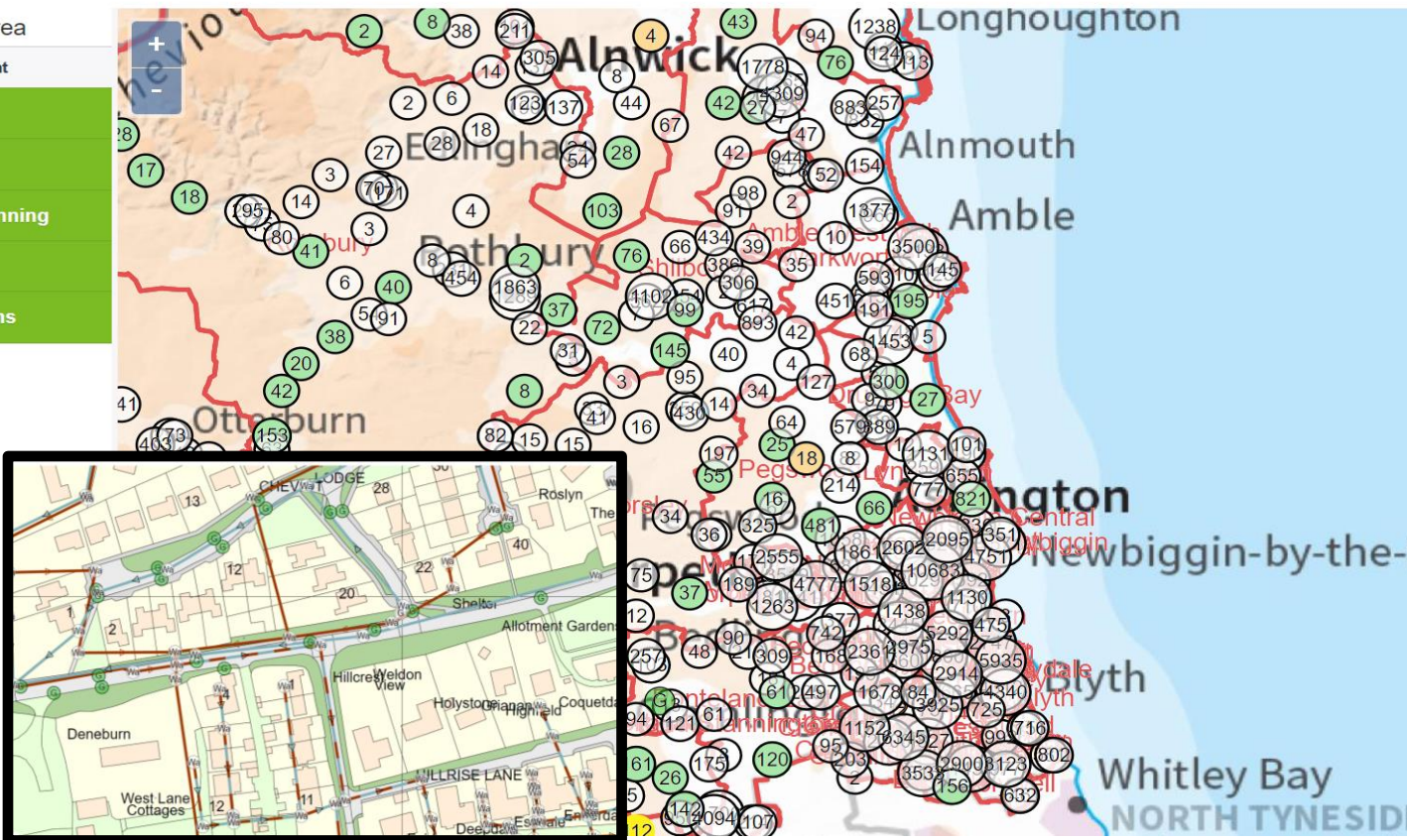


Measure Help

Tynedale Area

© Copyright

- Find
- View
- Work planning
- Reports
- Operations



- Gathering data for 24 months.
- Reviewing performance
- New Machinery
- Route based focus on cleansing to improve productivity.
- Performance reports.



# Other Assets

## Street Lighting

- Recently converted to LED
- Fault repairs and replacement of damaged columns
- Programme of statutory electrical testing

## Traffic Lights

- Service provided by Regional Traffic Signals
- Annual inspections of all installations
- Repair of identified faults
- Moving to bulk lamp change approach

## Signs and Lines

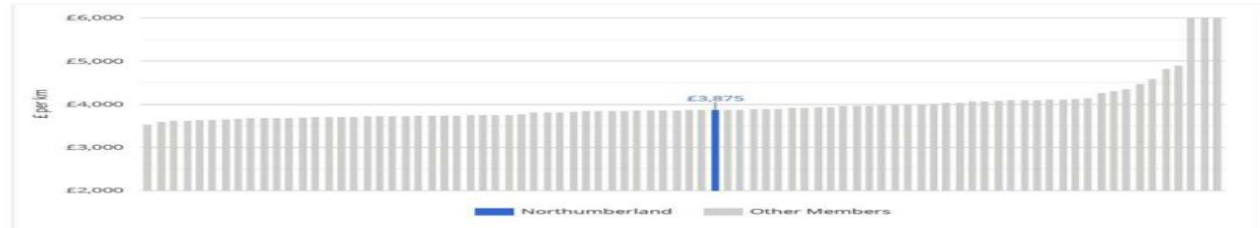
- Replacement and remarking - priority for key regulatory and warning signs

## Safety Fences

## Soft Landscaping – verges and trees



# Performance



- Principal Road Network has consistently needed 3% of its length requiring improvement over last 5 years – 1% better than national average.
- Non Principal Road Network (B & C roads) in 21/22 needed 5% of its length requiring improvement – 1% better than the national average.
- Unclassified network condition surveys continued to show decline in condition over last 5 years, although these may not reflect recent £15m investment.
- The Average Bridge Condition Index has also been consistent over the last 5 years between 85% and 87% of bridges considered to be in a “State of good Repair”
- Footway Performance indicators introduced in recent years would indicate a 4% deterioration in condition.
- NCC Street Lighting has been identified as a best performing finalist in APSE performance networks benchmarking in each of the last two years

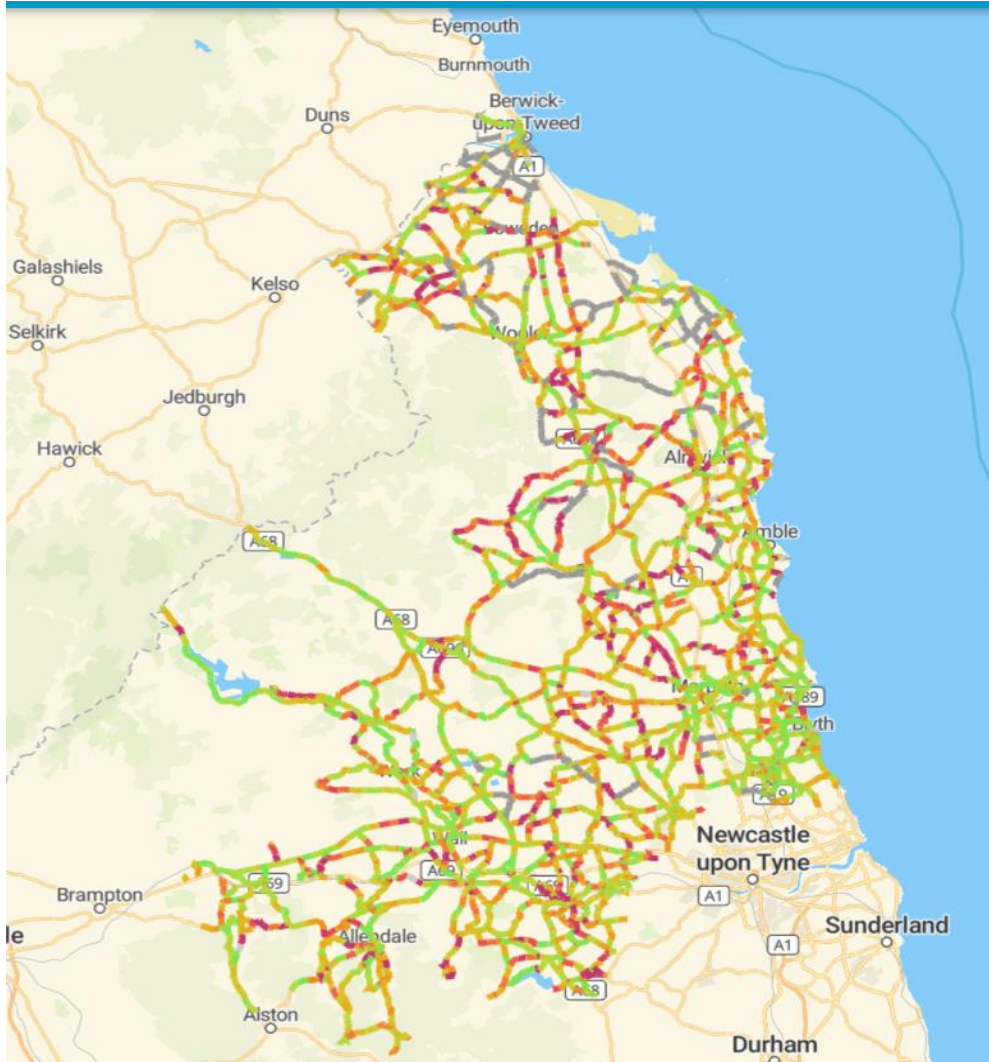


# Annual Budgets

|                     |                           |
|---------------------|---------------------------|
| Revenue             |                           |
| Highway Maintenance | £2.717m                   |
| Gulley Maintenance  | £0.395m                   |
| Street Lighting     | £0.664m (exc electricity) |
|                     |                           |
| Capital             |                           |
| LTP Maintenance     | £21.453m                  |

Additional capital funding from U and C and Footway Programme, DfT Challenge Fund bids, etc

# Camera Based Surveys – Vaisala AI



**PAVEMENT CONDITION**

- 100.00 %
- 75.00 %
- 50.00 %
- 25.00 %
- 0.00 %

| Action    | OK | Fix | Replace | Missing |   |
|-----------|----|-----|---------|---------|---|
| Condition | 5  | 4   | 3       | 2       | 1 |

Tags: add tags

Text: —

Category: prohibitory

Name: Maximum speed limit (20)

Country code: gb:670V20

Additional info: —

Time: 10/11/2021, 12:47:31

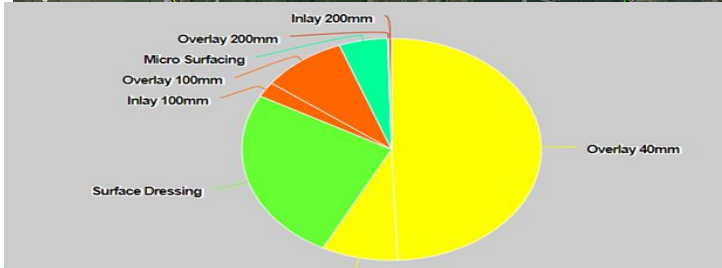
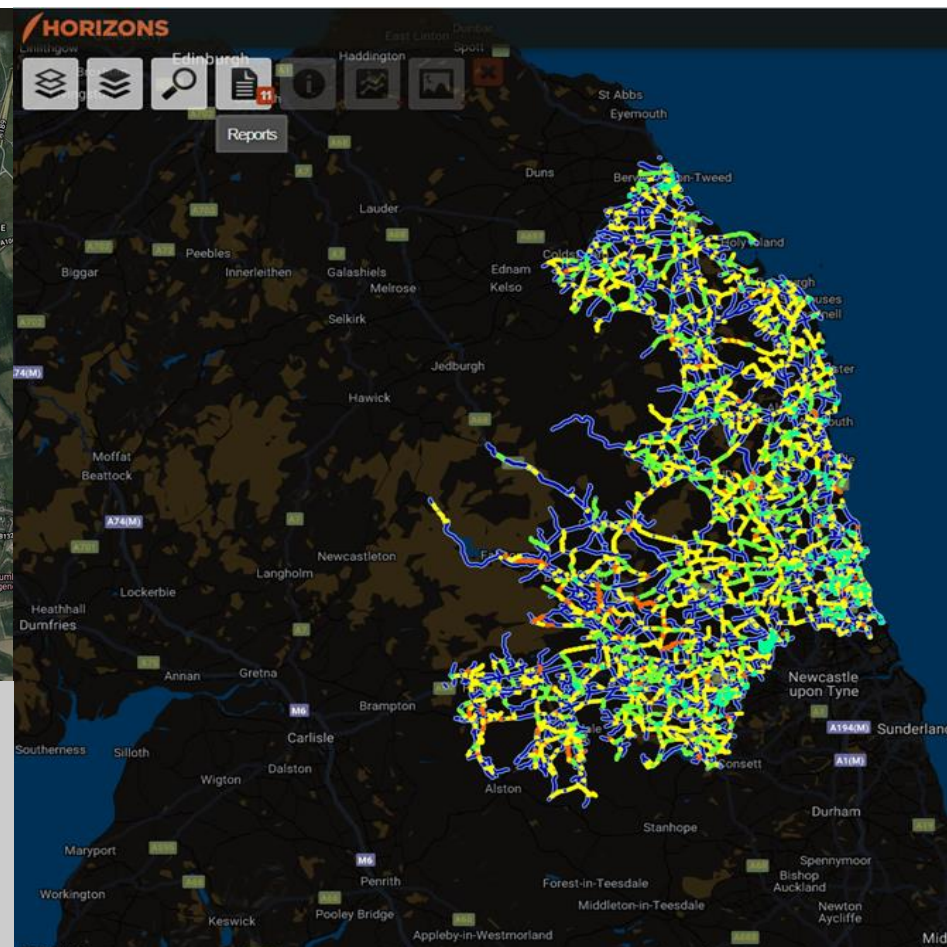
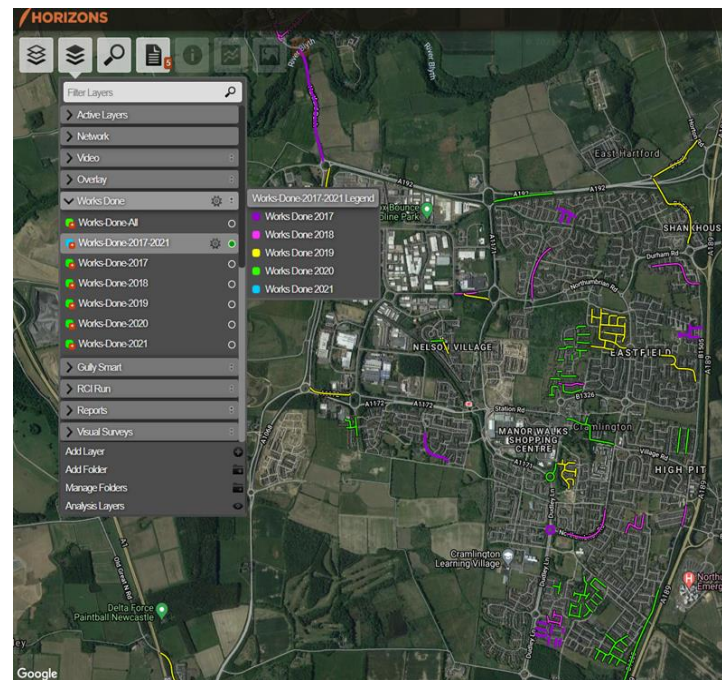
Address: U6546, 1260U6546100048, 199

Location: 55.12732, -1.59601 (WGS:84)



# Horizons

Data analysis, treatment choices and modelling of investment scenarios



# Climate Carbon Impact (Materials used)

## Tar Bound Planings

- **10,920T** recycled back into roads in 2021
- Saving circa **£2m** on landfill charges. Carbon saving of **350T**

## Warm Temperature Asphalts

- Working with Tarmac to supply warm mix Asphalt for NCC roads/footpaths
- 4% usage = Potential Carbon saving of **50-80T**

## Developments in concrete.

- Under review to reducing cement use





# Future Developments Web Reporting / Information

Northumberland County Council

**CLICK MAP TO REPORT A PROBLEM**

Show **All** reports about **Everything**

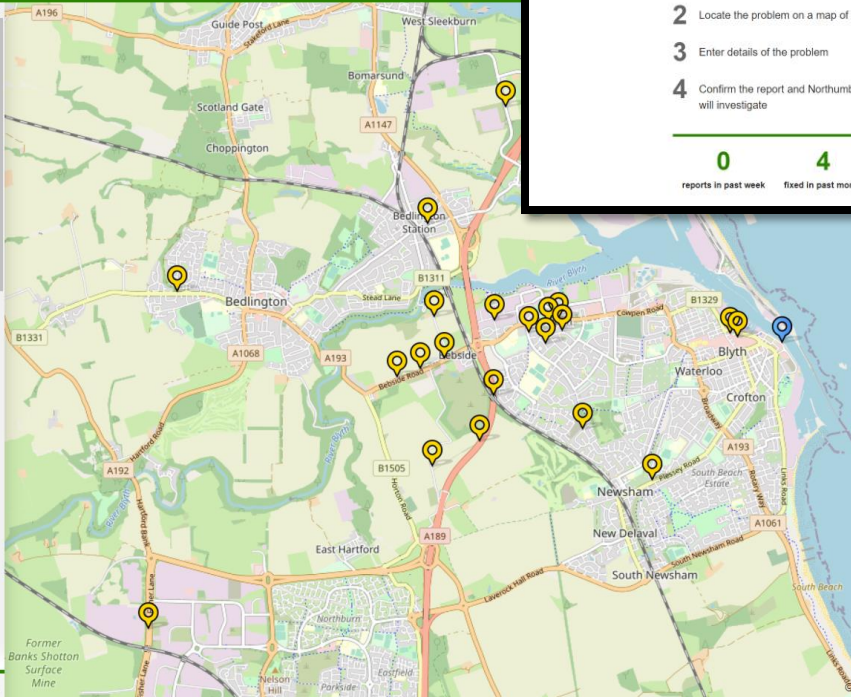
Sort by **Newest**

Show older reports

1 to 22 of 22 [Show older](#)

- P**  
15.11, 3 Mar 2022, last updated 15.15, 3 Mar 2022
- Big Hole**  
17.05, 2 Mar 2022, last updated 17.10, 2 Mar 2022
- Rferf**  
00.33, 1 Mar 2022, last updated 00.35, 1 Mar 2022
- Drain blocked**  
17.06, 28 Feb 2022, last updated 17.10, 28 Feb 2022
- 10 inch hole**  
17.01, 28 Feb 2022, last updated 17.05, 28 Feb 2022
- Test CP 2**  
16.13, 28 Feb 2022, last updated 16.17, 28 Feb 2022
- Test Car Park Issue**  
**closed** 12.58, 28 Feb 2022, last updated 16.12, 28 Feb 2022
- Test SL**  
13.51, 24 Feb 2022, last updated 14.19, 24 Feb 2022

[Get updates](#)



### Report, view, or discuss local problems

(like graffiti, fly tipping, broken paving slabs, or street lighting)

Enter a Northumberland postcode, street name and area, or check an existing report number:  
e.g. 'Newgate Street, Morpeth' or 'Main Street'

[Use my current location](#)

#### How to report a problem

- 1 Enter a Northumberland postcode, street name and area, or check an existing report number
- 2 Locate the problem on a map of the area
- 3 Enter details of the problem
- 4 Confirm the report and Northumberland County Council will investigate

#### Recently reported problems

- Another hole**  
21.13, 2 Mar 2022, last updated 14.14, 3 Mar 2022
- Something Wrong here**  
21.03, 2 Mar 2022, last updated 21.29, 2 Mar 2022
- Drain blocked**  
17.06, 28 Feb 2022, last updated 17.10, 28 Feb 2022
- Mud on the Road from a dirty Farmer**  
18.00, 7 Feb 2022, last updated 18.05, 7 Feb 2022
- Damage Gully**  
14.39, 4 Feb 2022, last updated 14.40, 4 Feb 2022

**0** reports in past week

**4** fixed in past month

**190** updates on reports

one.network

**Roadworks, delays likely**  
5 May 2021 - 4 May 2022  
C190 Pegwood Main Road Through Village...

**Responsibility for these works**  
Northumberland County Council

**Information for Road Users**  
Name: 121760215\_C195 Pegwood Main Rd Through Village  
Description: Northumberland County Council road closure for resurfacing works.  
Road closure order valid 05/05/2021 - 04/05/2022.  
It is expected that the road will be closed from 12:07/2021 - 23:07/2021 between the...

# Purchase of JCB Pothole Pro



- Trial held in the South East and Castle Morpeth area in 2021.
- Received positive feed back from the teams using it.
- Order was placed in Feb 2022.
- Machine delivered, operators recruited and training undertaken, went live Oct 2022