TII Web Portal Developments

Niall Hayden
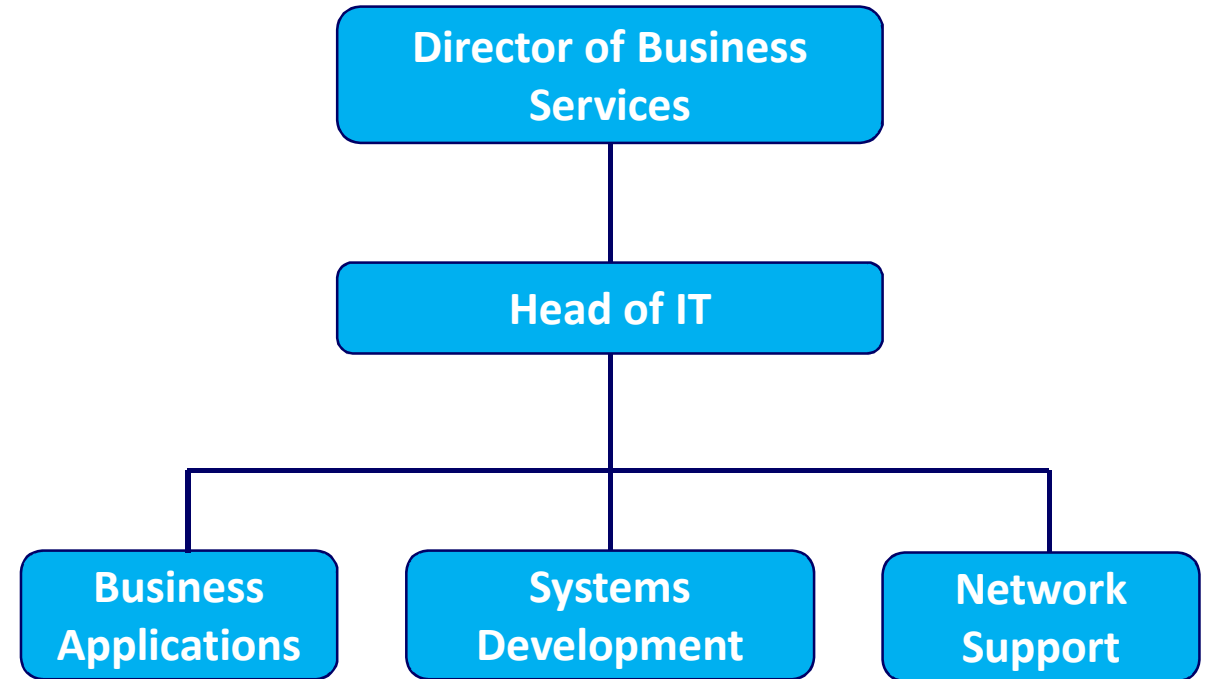IT Systems Development Manager
Transport Infrastructure Ireland

Systems Development in TII

IT Systems Development Section

- In-house Systems Development team

- Reporting to Head of IT

- Currently 4 software engineers; augmented with external resources as required

- Development and maintenance of 30+ systems and applications for TII, Local Authorities and other partners/interfaces

- Expertise in

  - Web Application Development

  - Data Engineering

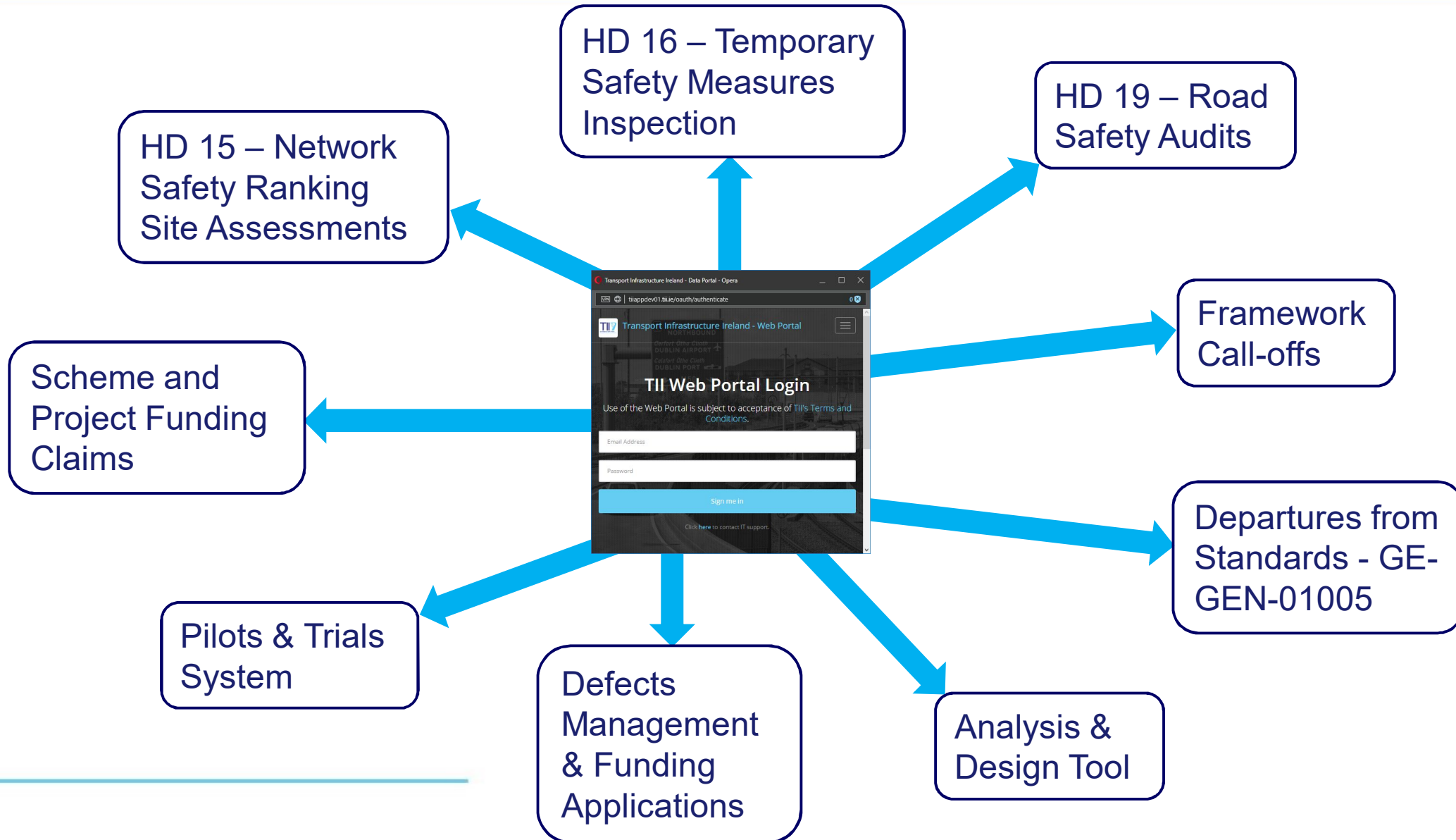 - Big Data & Data analytics

  - Mobile Applications

```
Director of Business Services
        |
   Head of IT
        |
  ┌─────┼─────────────┐
Business      Systems      Network
Applications  Development  Support
```

TII Web Application Portal

TII Web Application Portal

Use of this site is for authorised persons only and requires registration.

Authorised users can access the relevant systems by clicking on the Systems drop-down menu above. If you have been invited to register click the Register menu option under the Account menu above to complete the registration process.

Web Portal Systems

HD 16 – Temporary Safety Measures Inspection

HD 19 – Road Safety Audits

HD 15 – Network Safety Ranking Site Assessments

Framework Call-offs

Scheme and Project Funding Claims

Departures from Standards - GE-GEN-01005

Pilots & Trials System

Defects Management & Funding Applications

Analysis & Design Tool

Overview

- Located at https://web.tii.ie (also https://web.nra.ie)

- Single Point of Access for all TII Software Systems

- Single Sign On + Self Service account management

- 1,500+ registered users – TII, Local Authorities, Public Bodies, Contractors and Consultants

- Accessible via Government Network and Internet

- High level of integration with TII internal corporate systems

- Hosted on TII's Private Cloud

- Audited for both Security and DP/GDPR compliance

- Currently undergoing upgrade programme

  – Move to Hybrid Cloud (Public + Private Cloud Infrastructure)

 – Upgrade of backend infrastructure and UI Refresh

Improvements

IT Systems Development team is constantly working on improving and optimising existing applications.

→ Functionality

→ User interface

Recent examples include:

TI7 Defects Management System ## Menu ▾

Welcome Niall Hayden

#D░░░░ FOOTP (C2), NONR

#D░░░░ FOOTP (C2), NONR

#D░░░░ DRAIN (C2), N3

#D░░░░ DRAIN (C2), N54

#D░░░░ DRAIN (C2), N87

#D░░░░ PAVEM (C2), N55

#D░░░░ DRAIN (C2), N3

#D░░░░ PAVEM (C2), N55

#D░░░░ VERGE (C2), N55

#D░░░░ PAVEM (C2), N87

#D░░░░ PAVEM (C2), N16

#D░░░░ PAVEM (C2), N87

#D░░░░ SIGNS (C2), N55

#D░░░░ LANDTREE (C2), N3

#D░░░░ BARRIER (C2), N55

#D░░░░ OTHER (C2), NONR

#D░░░░ OTHER (C1), NONR

#D░░░░ OTHER (C2), NONR

#D░░░░ OTHER (C1), NONR

#D░░░░ OTHER (C2), NONR
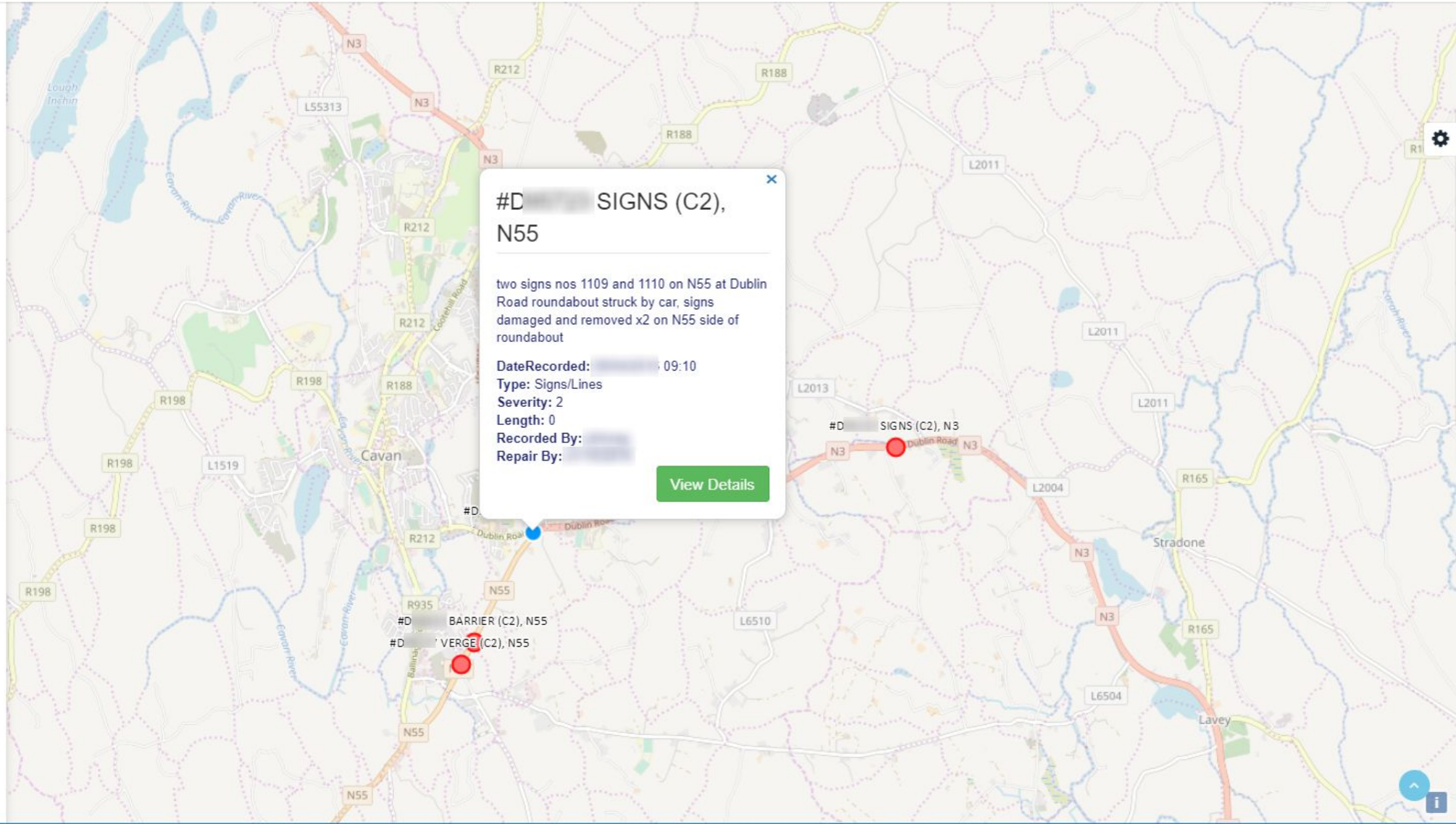
#D░░░░ SIGNS (C2), N55

two signs nos 1109 and 1110 on N55 at Dublin Road roundabout struck by car, signs damaged and removed x2 on N55 side of roundabout

DateRecorded: ░░░░ 09:10
Type: Signs/Lines
Severity: 2
Length: 0
Recorded By: ░░░░
Repair By: ░░░░

View Details

#D░░░░ SIGNS (C2), N3

#D░░░░ BARRIER (C2), N55

#D░░░░ VERGE (C2), N55

localhost:4201/#/engineer/schemes

TII - Project Reporting

Enter search term

Navigation

✓ **Engineer** ▾

○ Dashboard
○ Schemes
○ Worklist
○ Payruns

Schemes

Schemes

User Schemes

Code	Name	Status	Funding Start	Funding End	Current Allocation	Classification	Type	Budget	Payee	Actions
NR/09/4769	Motorway Service Areas (Tranche 1)	Open	01/01/2009 00:00	24/12/2015 00:00	€1,000.00	National Secondary	SEAI Route Lighting	SEAI R & L	Wexford Borough Council	View
NR/04/140/11	PPP - Toll Information Exch Agent Co	Open	01/01/2004 00:00	31/12/2016 00:00	€1,000.00	National Secondary	SEAI Route Lighting	SEAI R & L	Wexford Borough Council	View
KY/16/12900	Local Authority Support (Maintenance) 2016 KY	Open	01/01/2016 00:00	29/12/2016 00:00	€1,000.00	National Secondary	SEAI Route Lighting	SEAI R & L	Wexford Borough Council	View
WH/16/13114	SL: Speed Limits 2016 - WH	Open	01/01/2016 00:00	01/02/2017 00:00	€1,000.00	National Secondary	SEAI Route Lighting	SEAI R & L	Wexford Borough Council	View
NR/16/13429	Severe Weather 2016/Flood Relief Funding Contingency	Open	01/01/2016 00:00	08/09/2017 00:00	€1,000.00	National Secondary	SEAI Route Lighting	SEAI R & L	Wexford Borough Council	View
LH/16/13244	N53LH_010.5 Rassan	Open	01/01/2016 00:00	14/06/2017 00:00	€1,000.00	National Secondary	SEAI Route Lighting	SEAI R & L	Wexford Borough Council	View
WX/15/12523	N11 PPP (Gorey Service Area) Provision of Security	Open	01/01/2015 00:00	31/12/2016 00:00	€1,000.00	National Secondary	SEAI Route Lighting	SEAI R & L	Wexford Borough Council	View
NR/04/210/06	Com/PR/Cons - General Communications	Open	01/01/2004 00:00	31/12/2016 00:00	€1,000.00	National Secondary	SEAI Route Lighting	SEAI R & L	Wexford Borough Council	View
KY/16/13203	N72KY_032.0 N72 Stagmount Bends	Open	01/01/2016 00:00	23/03/2017 00:00	€1,000.00	National Secondary	SEAI Route Lighting	SEAI R & L	Wexford Borough Council	View
KE/16/12734	Local Authority Support (Improvement) 2016 KE	Open	01/01/2016 00:00	29/12/2016 00:00	€1,000.00	National Secondary	SEAI Route Lighting	SEAI R & L	Wexford Borough Council	View

#/departuresView

TII - Departure From Standards

Enter search term

Niall Hayden
SDEV

Navigation

- **Dashboard**
  - Welcome
  - Departures List
- **Administration**

Departures View

Departures List

New

Show | 5 | entries   Copy CSV Excel PDF Print   Search:

DepartureNo	LocationDescription	SchemeName	Status	Actions
	M11 Ch. 17+520 Northbound	M11 Gorey to Enniscorthy PPP Scheme	Approved	Edit
	N16-Drummahan, 16km North East of Sligo, 10km west of Manorhamilton.	N16 Drummahan Realignment	Refused	Edit
	N16 Drummahan, 16km North East of Sligo, 10km West of Manorhamilton	N16 Drummahan Realignment	Rejected	Edit
	M50 Junction 4 Northbound Merge	MMaRC	Approved	Edit
	M50 Junction 4 Southbound Merge	MMaRC	Approved	Edit

Showing 1,796 to 1,800 of 1,827 entries1 row selected

Previous 1 ... 359 360 361 ... 366 Next

Departure

Details

Date Received: 17:24

Created By:

Scheme Name: M11 Gorey to Enniscorthy PPP Scheme

Route No: 13

Applicant:

Location Description:

Comments

Documents

No Documents

← → C ⓘ ~~localhost:~~adt/pavement ☆ :

⊖ — ◻ ✕

TII - Analytical Design Tools

Navigation

✔ Analytical Design Tools ▾

○ Pavement

Select Project

| N15 Resurfacing ▾ | New |

Select Scheme

| Phase 1 ▾ | New |

⚙

Main Details

Designer name: DP

Date: 29/09/2017 📅

Local Authority: Donegal County Council

DETAILS OF PROPOSED SURFACE DRESSING SCHEME

Road Number: N15

Location: Drumboe

Length of Scheme (m): 1000

Road Width (m): 2

Existing Road Surface: SD

Speed Limit (km/h): 60

Hard Shoulder: ☐Yes ☐No

Additional Comments:

Start Co-ordinates (ITM)

1 - Type of Surface Dressing and Chipping Size

Type of Surface Dressing: Double Surface Dressing ▾

1st Layer

| **Chip Size:** 10/14 ▾ | **Quarry Source:** Quarry B |
| **PSV:** 75 | **ALD (mm)** 8.8 |

2nd Layer

| **Chip Size:** 6/10 ▾ | **Quarry Source:** Quarry C |
| **PSV:** 70 | **ALD (mm)** 7 |

2 - Traffic Volume

AADT (Annual Average Daily Traffic): 3500

% of Commercial Vehicles: 4

Number of Lanes: 2

AADF (Annual Average Daily Flow): 1750

Equivalent Light Vehicles: 2380

5 - Basic Rate of Spread of Emulsion

Type of Emulsion Binder: ViaFlex

Binder Content of the Emulsion (%): 75.3

Rate of Spread of Emulsion (L/m^2): 2.27

6 - Site Specific Adjustments to the Binder Application Rate for 1st Layer

Shade:	0.0 (Unshaded)	0.00
North Facing:	+0.2 (North Facing)	0.20
High Altitude:	0.0 (Not High Altitude)	0.00
Normaly Wet Roads:	0.0 (Dry Roads) ▾	0.00

Total Site Adjustments to the 1st Layer (L/m^2): 0.20

7 - Final Application Rates for 1st Layer

Proportion of Binder Application Rate [1st Layer] (%): 55

Rate of Spread of Emulsion [1st Layer] (L/m^2): 1.40

Upgrade Programme

- Why?
  - Incremental improvements for emerging requirements
  - 6 New Windows Versions
  - 5 New Database Server Versions
  - New working environment resulting from NRA & RPA merger
 - Paradigm Shifts – Cloud, Cybersecurity & Privacy

- Changes to user interface
  - Primarily in-house developed systems
  - Modern User Interface (UI) aesthetic
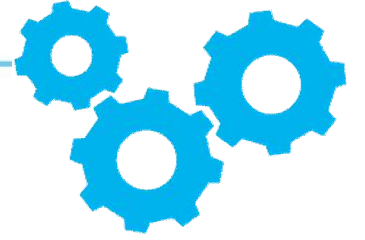 - Single Page Applications

Upgrade Programme

- Defects Management System

  – Signs & Lines Portal

  – Roadworks & Health and Safety Inspections

  – Defect Management System

- New Identity Management and Sign-in Model

  – Implements the OAuth2 Standard for Authentication

  – Continues with SSO

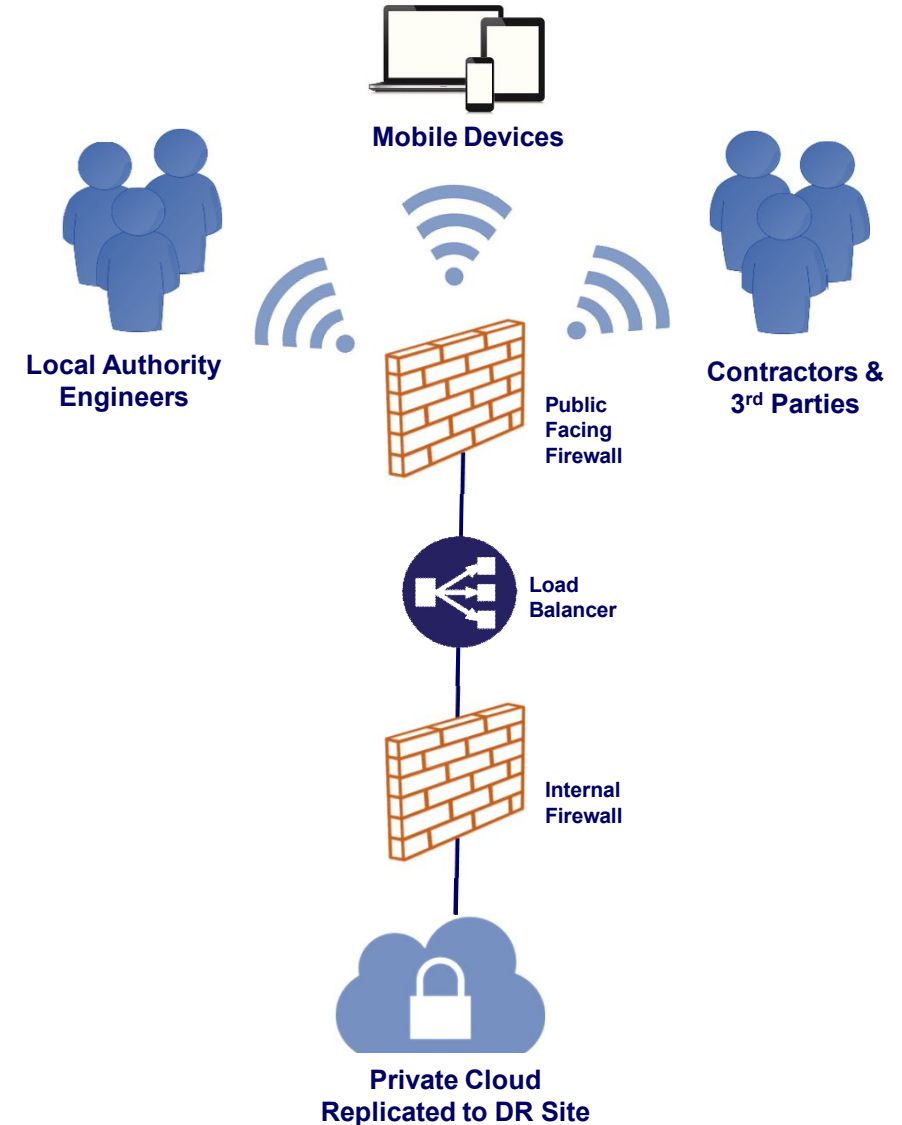 – Federated Identity Management
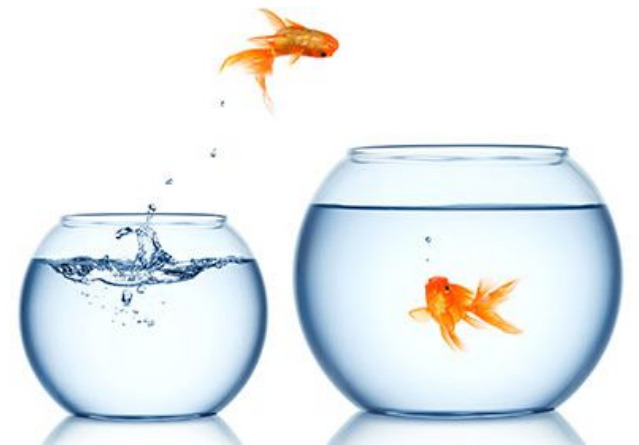
Web Portal Systems

Increasing number of Web API's

– Application Programming Interfaces

– Dynamic Exchange of Data

– Backend Processing and Task Automation

Security & Data Protection

- Regular Security Audits by External Consultants
- Overseen by TII's Audit Committee
  - Cybersecurity
  - Data Protection and Privacy
- Robust, Industry Standard, Architecture Architypes applied
  - Firewalled DMZ
  - Load Balancing
  - Reverse Proxy
  - Packet Inspection
  - Passive Monitoring
  - Intrusion Detection
- Internal Review of Practices and Procedures in preparation for the General Data Protection Regulations

Mobile Devices

Local Authority Engineers

Contractors & 3rd Parties

Public Facing Firewall

Load Balancer

Internal Firewall

Private Cloud Replicated to DR Site

Thank you!