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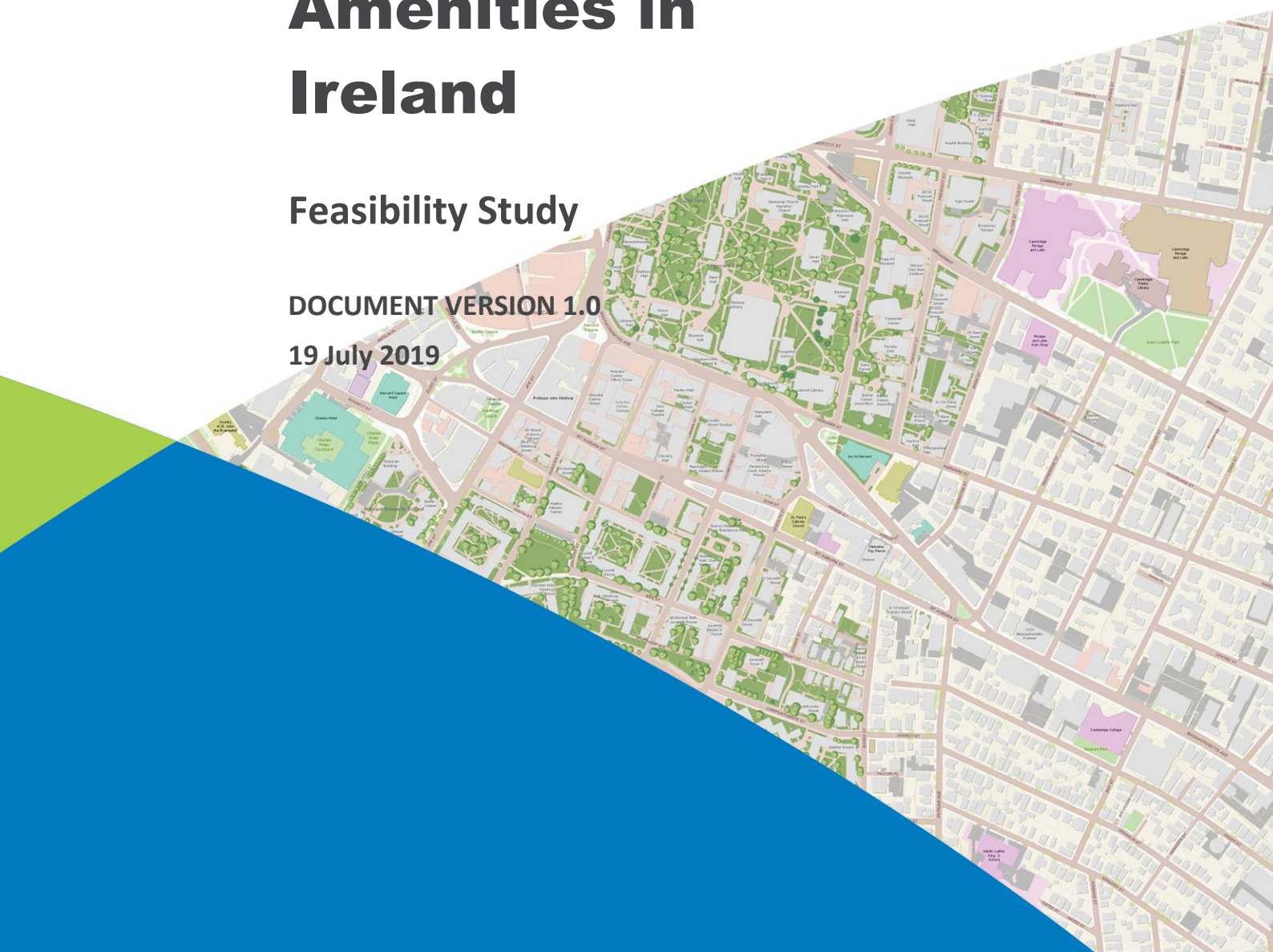
Developing a Base Registry of Sports & Recreation Amenities in Ireland

Feasibility Study

DOCUMENT VERSION 1.0

19 July 2019



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1.1. Background

According to Healthy Ireland, 61% of all adults and 25% of 3-year-olds in Ireland are overweight or obese; 26% of 9-year-olds have a body mass index outside the healthy range.

Physical inactivity is a demonstrated clear risk to health and wellbeing in Ireland, whereas an active lifestyle helps to prevent many diseases and promotes health and wellbeing throughout the life cycle.

The **Healthy Ireland Framework** identifies the need to "increase the proportion of population undertaking regular physical activity – across each life stage", while removing the barriers that may impede people's ability to make healthy choices.

One such barrier is accurate, up-to-date information on the opportunities for sport and recreation in all its forms. Whether someone is looking for somewhere to walk or cycle, join a sailing club or try rock climbing, the lack of easy-to-find information can prevent them from taking part, and mean reverting to more sedentary behaviours.

Government agencies have identified the need for a single national source of information relating to recreation amenities. As a representative on the **Sports Leadership Group** of the Department of Transport, Tourism & Sport and the **National Physical Activity Plan Implementation Group**, Sport Ireland is tasked with supporting implementation of the Government's vision for sport and physical activity in Ireland:

- The **National Physical Activity Plan** includes an objective to "develop a publicly accessible national sports/ recreation facilities and amenities directory." This directory could be accessed either directly by the public or by healthcare professionals as one of the elements of an all-Ireland **Social Prescribing Network**.
- In parallel, Action 18 of the **National Sports Policy** aims to "develop and maintain a fully-accessible, comprehensive and up-to-date national database of sports facilities which will also be translated into a web-based portal to serve the needs of the public."

As well as providing information to the public, a database on sports amenities could facilitate collaboration, data sharing and strategic planning across the public sector. Visual map-based information, which can be combined with data from other sources, would improve spatial planning and investment in many areas. This would help to deliver on many national policies, including the **Project Ireland 2040 National Planning Framework** and **National Development Plan 2018-2027**.

Moreover, the database has the potential to help the Irish tourism sector to operate to 'best in class' in the digital space, a target of Fáilte Ireland's **Tourism Development & Innovation: A Strategy for Investment 2016-2022**. By making it simpler for tourists to find information on activity opportunities, while easily combining this with transport and accommodation information among others, they may be more likely to stay longer or visit less-frequented areas.

Additionally, this database would help organisations to meet guidelines on the use and optimization of data from within Ireland and further afield, such as the **Public Service Data Strategy** and the **United Nations Committee of Experts on Global Geospatial Information Management.**

On this basis, Sport Ireland commissioned this feasibility study, with support from Healthy Ireland and carried out by ESRI Ireland.

1.2. The Feasibility Study

This study reports on all matters relating to the feasibility, design and development of a new digital geo-database for outdoor recreation, sport and physical activity amenities in Ireland. It considers the practicalities of collecting information from a range of sources into a central repository, identifies target users and sets out the technical requirements and challenges of collating, coordinating and maintaining the data.

The feasibility study is divided into 8 sections:

- Section 1 is the Executive Summary.
- Section 2 provides the context and background to the project, and policy drivers that a national database could support.
- Section 3 reports on the consultation process and feedback received from stakeholders during the project.
- Section 4 summarises the benefits to the public and government of establishing this digital database, including infrastructure planning, safety, health, business management and public engagement.
- Section 5 outlines how different users will interact with the system (user journeys).
- Section 6 and Section 7 examine the feasibility of establishing the Base Register and GeoHive, including the technical specifications and design of the database and how data will be managed and maintained. It also sets out an implementation plan for the project and estimates the cost of full implementation.
- Section 8 summarises the main conclusions and recommendations of the study.

1.3. Database & Publication

The study finds that is it feasible to develop and maintain a **National Database of Sport & Recreation Amenities**, using existing GIS (Geographic Information Systems) technology. It would allow publication of information that is:

- Accurate (high-quality spatial information with associated attributes)
- Up to date (maintained at agreed periods by data providers)
- Visually engaging and impactful via maps and images
- Easy to use and search (filter by location, suitability and other factors)
- Interactive (public can easily filter, search and provide feedback on amenities)
- Possible to 'mash up' with other data (e.g. weather, accommodation, transport)
- Published across Platforms (websites, GeoHive, apps, on all devices)
- Available as Open Data

It is recommended that the data be published on:

- GeoHive (Ordnance Survey Ireland's collaborative platform for spatial data)
- Websites (A national 'one-stop-shop' website for the public, as well as websites specific to contributing bodies as required)
- Apps (Open Data available for developers, allowing for future developments in technology)

1.4. Use Cases

The feasibility study found that a **National Database of Sport & Recreation Amenities** has the potential to benefit many different user groups, including:

User Group	Sample Use of Database	Benefits
1. General Public	Find sports amenities for the family and plan a full day out by adding layers for other facilities, such as restaurants.	More active on a regular basis. Kids enjoy exploring new areas and activities.
2. Doctor / Healthcare Professional	Identify suitable social and recreational opportunities for patients as part of Social Prescribing.	Improve overall wellbeing and rely less on medication alone.
3. Planner	Overlay data on existing recreational amenities with population projections and conservation areas to plan development of green spaces and trails.	More integrated and effective spatial and investment planning. Improved data sharing and collaboration between government bodies.
4. Trail Manager	When issues are identified on a trail by staff or public, they are flagged and managed on the system. Collaborate with neighboring local authority to assign jobs and track progress.	Effective asset management, demonstrating on-going monitoring and resolution of issues.
5. Overseas Tourist	Plan a trip better by combining information on long-distance walks, festivals, weather, transport and accommodation in one place.	More likely to stay longer and visit less-frequented areas.
6. Emergency Services	See data that is not published to the public, such as all access points to amenities. On a greenway or walking trail for example, this can save a lot of time.	Save lives by arriving more quickly at emergencies.
7. Person with Disability	One-stop shop for information on suitable amenities throughout the country, as well as details on parking and access.	More inclusion and wider opportunities to be active.
8. App Developer	Access open data to build cutting-edge applications using the latest technology and trends.	Ensure data remains widely available in the most relevant formats, allowing for future developments.

1.5. Collaboration, Strategic Planning and Management of Amenities

It was found that compiling this type of information would facilitate cross-sectoral collaboration, planning and management of recreational amenities. The national database would allow Spatial Information to be shared between contributing bodies, and to be combined with other existing data for more effective and strategic planning and development of all types of recreational amenities.

For example, visually layering existing recreational infrastructure with census statistics, conservation areas and planning zones could help in green space planning for an area or region. Similarly, the system's asset management capabilities could facilitate development and management of greenways between neighboring local authorities.

The need for this type of planning and collaboration has been identified in several national policies, including:

- National Policy Objective 26 of the **Project Ireland 2040 National Planning Framework** aims to ssupport the objectives of public health policy including Healthy Ireland and the National Physical Activity Plan, through integrating such policies, where appropriate and at the applicable scale, with planning policy.
- The **National Physical Activity Plan** includes the goal to prioritise the planning and development of walking and cycling and general recreational /physical activity infrastructure.

1.6. Data Policy

There are many policies guiding the improved sharing and management of data across the public service. One of the core principles of the **Public Service Data Strategy** is to create and maintain base registries of definitive national information, allowing data to be published to the public, shared and re-used, and employed to support evidence-based decision making.

Geospatial data is a key enabler for evidence-based decision making and, according to the **United Nations Committee of Experts on Global Geospatial Information Management** (UN-GGIM, 2015), it is no longer just used for mapping and visualisation, but also for integrating with other data sources, data analytics and modelling.

It was found that this database would serve as an effective base registry for Sports & Recreational Facilities and Amenities in Ireland. This would also align with the Public Service ICT Strategy theme of "Data as an Enabler" where this proposed national database will become a node on the government's emerging "National Data Infrastructure" on the GeoHive website and the Public Services Data Strategy (https://www.gov.ie/en/publication/1d6bc7-public-service-data-strategy-2019-2023/) that sets out the context for any development of authoritative, national datasets.

1.7. Summary of Findings

The feasibility study project included collaborative workshops with a broad range of stakeholders including:

- Department of Rural & Community Affairs
- Department of Culture, Heritage and the Gaeltacht
- Department of Transport Tourism & Sport
- Health Service Executive
- Healthy Ireland
- Ordnance Survey Ireland
- National Parks and Wildlife Service
- Fáilte Ireland
- Sport Ireland
- Waterways Ireland
- Bord na Móna
- Inland Fisheries Ireland
- Smart Dublin
- Local Authorities
- Local Authority Open Data Group
- Local Development Partnerships
- National Sports Governing Bodies (NGB's)

Feasibility Study Conclusion:

There is broad support across many state agencies, sporting bodies and other organisations for establishing a National Database of Sports & Recreation Amenities. The benefits of establishing this digital database outweigh the potential risks and estimated costs. The project is feasible, providing there is a level of buy-in from the identified data providers.

The database will help to deliver on many national policies, covering National Development, Health, Sport and Data Management.

Development of this National Database will require:

Cost:	**€2 million**
Timescale:	**3-4 years in a phased approach**
Pilot Phase:	**6 months, starting immediately, costing €80k to build and test proof-of-concept system**

The key recommendations of this feasibility study are as follows:

<table>
<tr><th>Theme</th><th>Recommendation</th></tr>
<tr><td>Feasibility</td><td>The benefits of this project vastly outweigh the potential risks and estimated costs so overall the project is feasible, providing there is a level of buy-in from the identified data providers. In fact, the economic, human and social cost of not proceeding with this initiative is much higher than the projected implementation cost, for example, the cost per person associated with overweight and obesity in children is in excess of €16,000.</td></tr>
<tr><td>Pilot</td><td>This study should be followed by a pilot phase to…
Collate as much currently available data on sports and recreational amenities as possible
Create the pilot database and establish a pilot portal
Build supporting collateral to demonstrate the pilot
Publish the initial database link to GeoHive in liaison with the GeoHive team
Use the collateral to establish and present the business case for this initiative
Use the collateral to build a core working group from interested stakeholders and data providers
Move the project forward to implementation
The roles required and costs for this pilot are estimated below and the duration is recommended to be limited to 6 months…<table><tr><th>Role</th><th>Suggested Time Allocation</th><th>Estimated Cost</th></tr><tr><td>Spatial Data Manager</td><td>2 days/week for 6 months</td><td>~€30,000</td></tr><tr><td>GIS Architect</td><td>1 day/week for 6 months</td><td>~€20,000</td></tr><tr><td>Lead Consultant</td><td>2 days/week for 6 months</td><td>~€30,000</td></tr><tr><td>GeoHive support</td><td>GeoHive team to confirm</td><td>tbc</td></tr><tr><td colspan="2">Total</td><td>€80,000 + GeoHive support costs</td></tr></table>Ideally some members of the working group would have been involved in similar initiatives in Ireland such as PETaL (consolidated planning information from local authorities). More details on this phase can be found in section 7.4 of this document</td></tr>
<tr><td>Implementation</td><td>The key factor in managing the cost and maximising the benefits of this project will be to carry out the implementation in a series of clearly defined achievable iterations, each one limited to a timescale of 6-9 months. Each system iteration should be followed by an ‘Inspect and Adapt’ phase that assesses work completed and any lessons learnt from the previous iteration and prioritises work and ensures data provider buy-in for the next iteration.</td></tr>
<tr><td>Commitment</td><td>A clear commitment of data updates, time and resources is required from each data provider to the Sports & Recreational Amenity database. The best way to achieve this is if the data providers have a clear mandate to provide this information. It is recommended that one way to achieve this would be in liaison with the local authority</td></tr>
</table>

	open data group as they have existing mandates in place. Project funding should be dependent on this data being provided and maintained.
Alignment	The implementation of the Sports & Recreational amenity database should be firmly aligned with each of the principles of the Public Services Data Strategy 2019-2023 (https://www.gov.ie/en/publication/1d6bc7-public-service-data-strategy-2019-2023/) that sets out the context for any development of authoritative, national datasets. In fact, this initiative delivers one of the strategic themes, namely to develop base registries and the processes required to govern their operation. The European Interoperability Framework describes base registries as 'reliable sources of basic information on items such as persons, companies, vehicles, licences, buildings, geographic locations and roads…' that are 'authentic and authoritative, and form the cornerstone of Public Services'.
Resources	Dedicated resources should be put in place for the implementation of this initiative as there will be substantial work required to coordinate the provision of data and the implementation of the system. It is recommended that a core team comprising at least two full-time resources be established; a Data Manager and a Lead Consultant.
Data Management	Data Management processes must be put in place to ensure the Sports & Recreational Amenity database is updated on a regular basis and any data issues are identified at source and resolved by the individual data owners before import into the database.
Data Quality	Substantial effort will be required to ensure that the quality of any amenity information is consistent across the country especially in areas such as crossing county boundaries. In addition, the attributes held for each amenity type across data providers may differ, the recommendation is that a core set of attributes is persisted to reflect the core information stored and maintained by all data providers.
Data Ownership	It is recommended that the 'ownership' of data within the data supply chain is clearly communicated. In summary, data providers will retain ownership of their data and be responsible for resolving any issues with that data that may prevent it being combined with data from other providers.
Data Access	There should be two versions of the Sports & Recreational Amenity database… • An operational version that is made available on a cloud or on-premise basis. This will be the base registry of sports and recreational amenities in Ireland and access to this database would be granted for data providers to update from their existing systems. This version of the database would be available to local and central government stakeholders and used for scenarios such as Asset Management of trails and other amenities across agencies. • A publication version of the database would be produced from a subset of the data elements in the operational database. This would be the publicly available version and a link to this database would be made available on GeoHive
System Integration	The publication version of the database should be made available in ways that maximise opportunities for users to discover and use it, for example using truly open data formats and Application Programming Interfaces (API's). The team should continually look for opportunities to innovate and update and share the Sport and Recreational Amenity information in new ways and with new partners
Communication	Develop a communication strategy with a full PR and marketing campaign for the publication of the National Sports and Recreation amenity information. This strategy should run in parallel with each phase of the project implementation. Indeed, the branding of the overall database and main portal can be neutral or branded to reflect the particular portal it is being published on. It would be the intention to publish the

<table>
<tr><td></td><td>data to facilitate its publication on a variety of public portals designed to suit different stakeholders and their target users.</td></tr>
<tr><td>Implementation Costs</td><td>The estimated costs by phase of the implementation of a national Sport and Recreation base registry are as listed below. These are expanded upon in more detail in section 7.3. As these costs are for budgetary purposes, the worst-case scenario has been assumed, that is that all resources are contracted in and the daily rate assumed is €800 per day.
These costs assume the hosting of the Sport & Recreational Amenity database would be within its own dedicated environment and a link to the Publication database would be published on GeoHive. If cost, resources or time constrain this then an alternate plan for the pilot and Phase 1 of the project could be to host the database entirely within ArcGIS Online with a view to having a dedicated environment in a later phase.
<table>
<tr><th>Phase</th><th>Duration</th><th>Cost</th></tr>
<tr><td>1</td><td>9 months</td><td>€650,000</td></tr>
<tr><td>2</td><td>6 months</td><td>€330,000</td></tr>
<tr><td>3</td><td>6 months</td><td>€300,000</td></tr>
<tr><td>4</td><td>6 months</td><td>€280,000</td></tr>
<tr><td>5</td><td>6 months</td><td>€300,000</td></tr>
<tr><td>6</td><td>3 months</td><td>€140,000</td></tr>
<tr><td colspan="2">Total</td><td>€2,000,000</td></tr>
</table></td></tr>
</table>

Acknowledgements

Sport Ireland would like to acknowledge and thank the Department of Health (*Healthy Ireland*) for funding this initial feasibility study.

Sport Ireland and Esri Ireland would also like to acknowledge the time and commitment given to us by all the consultee organisations that contributed to this project (Ref: Appendix A). Their input was invaluable, and we are very appreciative of their involvement and participation.

Esri Ireland would like to acknowledge the input of staff within Sport Ireland that worked on this project and staff within Ordnance Survey Ireland for their support and input throughout.

2. Introduction

2.1. Background

Ireland is set to become **the most obese country in Europe** within a decade, according to a study recently published in The Lancet. Irish men already have the highest body mass index (BMI) – a key measure of overweight – in Europe, while Irish women rank third, the study shows. To quote Prof Majid Ezzati from the school of public health at Imperial College "To avoid an epidemic of severe obesity, new policies that can slow down and stop the worldwide increase in body weight must be implemented quickly and rigorously evaluated".


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Ireland's obesity rate among world's worst

Irish men already have the highest body mass index in Europe, study shows

Fri, Apr 1, 2016, 01:00 | Updated: Fri, Apr 1, 2016, 07:00

Paul Cullen

Ireland is set to become the most obese country in Europe, with the UK, within a decade, according to a study. File

To help address major issues caused by physical inactivity, the **Healthy Ireland Framework** identifies the need to remove the barriers that may impede people's ability to be more active. Such barriers would include accurate, up-to-date and easily accessible information on the opportunities for sport and recreation. Both the **National Physical Activity Plan** and **National Sports Policy** include objectives to develop a publicly accessible national directory of sports & recreation facilities and amenities.

Sport Ireland, in collaboration with its partners, set out to explore the possibility of establishing an authoritative **national base registry of all sport and recreation facilities and amenities** in Ireland and a management framework to maintain this asset into the future.

The proposed base registry will allow a range of organisations to capture, manage and share information to a national directory. As well as being published as an authoritative national website, the data will feed into Ordnance Survey Ireland as it is envisaged that OSI will establish a new GeoHive content category for Sports & Recreational Amenities.

Sport Ireland received funding from the Department of Health (*Healthy Ireland Fund*) in 2018 to carry out a feasibility study into the development of such a database, and commissioned ESRI Ireland to undertake the study.

2.2. Context

Sport Ireland is the statutory agency responsible for the development of sport in Ireland, with a remit to plan, lead and co-ordinate the sustainable development of competitive and recreational sport in the country. The organisation works with many State Agencies, National Governing Bodies

of Sport, Local Sports Partnerships and other bodies involved in the promotion, development and management of sport and recreation.

Sport Ireland is a representative on the national **Sports Leadership Group**, established to drive implementation of the Government's National Sports Policy and on the **Physical Activity Plan Implementation Group**, tasked with coordination and implementation of the National Physical Activity Plan for Ireland.

Sport Ireland has supported the development of trails and outdoor recreation in Ireland over the past 15 years, assessing, mapping and accrediting walking, cycling and water-based trails that comply with national standards. The register of accredited trails is promoted and is shared with **Ordnance Survey Ireland** to ensure accurate information on national map products and databases.

There are many State Agencies and organisations involved in the development, provision and management of outdoor recreation, sports & physical activity amenities, such as national and urban parks, beaches, forest recreation sites and recreational trails as well as games pitches, swimming pools and other facilities. However, at present, there is no official directory of all outdoor recreation, sports & physical activity amenities in Ireland and no single platform to promote all sports and recreational amenities to the public.

The **Outdoor Recreation Group (ORG)**, a group of state agencies including Sport Ireland, had identified the collation and mapping of outdoor recreation amenities as a valuable partnership project.

Among these agencies, there is a strong belief that the creation of a spatial geodatabase of all sports and recreational amenities in Ireland would be a huge step forward in promoting the importance of physical activity. This would also align with the Public Service ICT Strategy and the Public Services Data Strategy.

2.3. Policy drivers

The main policy drivers for this project are as follows:

1. The **National Development Plan 2018-2027** sets out the investment priorities for implementation of the National Planning Framework. The Taoiseach's foreword leads with the importance of spatial planning and how it guides, informs and influences the choices we make which affect the fabric of our daily lives. This database will lead to better spatial planning within and across regions, and would help to deliver on strategic investment, particularly in the following areas of the plan:
    - Enhanced Amenity and Heritage: Large Scale Sports Infrastructure Fund
    - Strengthened Rural Economies and Communities: Rural Regeneration and Development Fund
    - The plan also references the National Greenway Strategy, which would also be supported by the powerful spatial planning facilitated by this database.

2. The **Project Ireland 2040 National Planning Framework** includes integrated planning, management and sustainable development to deliver quality of life and wellbeing, regional development, appropriate greenspaces and accessibility to amenities. This database could help to deliver on many aspects, including:

- **National Policy Objective 4** Ensure the creation of attractive, liveable, well designed, high quality urban places that are home to diverse and integrated communities that enjoy a high quality of life and well-being.
- **National Policy Objective 6** Regenerate and rejuvenate cities, towns and villages of all types and scale as environmental assets, that can accommodate changing roles and functions, increased residential population and employment activity and enhanced levels of amenity and design quality, in order to sustainably influence and support their surrounding area.
- **National Policy Objective 22** Facilitate tourism development and in particular a National Greenways, Blueways and Peatways Strategy, which prioritises projects on the basis of achieving maximum impact and connectivity at national and regional level.
- **National Policy Objective 26** Support the objectives of public health policy including Healthy Ireland and the National Physical Activity Plan, though integrating such policies, where appropriate and at the applicable scale, with planning policy.
- **National Policy Objective 27** Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments, and integrating physical activity facilities for all ages.
- **National Policy Objective 58** Integrated planning for Green Infrastructure and ecosystem services will be incorporated into the preparation of statutory land use plans.
- **National Policy Objective 61** Facilitate landscape protection, management and change through the preparation of a National Landscape Character Map and development of guidance on local landscape character assessments, (including historic landscape characterisation) to ensure a consistent approach to landscape character assessment, particularly across planning and administrative boundaries.
- **National Policy Objective 62** Identify and strengthen the value of greenbelts and green spaces at a regional and city scale, to enable enhanced connectivity to wider strategic networks, prevent coalescence of settlements and to allow for the long-term strategic expansion of urban areas.

3. **Healthy Ireland**, a Framework for Improved Health and Wellbeing 2013-2025 (Department of Health, 2013) is the national framework for whole-of-Government and whole-of-society action to improve the health and wellbeing of people living in Ireland. The Framework identifies a number of broad inter-sectoral actions, one of which commits to the development of a plan to promote increased physical activity levels.

4. The **National Physical Activity Plan** for Ireland, 'Get Ireland Active!', promotes specific actions to prioritise the planning and development of walking and cycling and general recreational /physical activity infrastructure and explore opportunities to maximise physical activity and recreation amenities in the natural environment. Specifically, it includes the following objectives…

    - Creating increased opportunities for people to be active in ways which fit in to everyday lives and which suits individual needs, circumstances and interests
    - Removing the barriers which people face to being active and encouraging people to recognise how to overcome those barriers
    - Enhancing cross-sectoral cooperation at national, local and community level to encourage physical activity at every level
    - Encouraging a supportive environment where physical activity becomes normal

- Promoting good practice and finding new models of participation which get more people active
- Facilitate healthy personal choices by making the physically active choice the easy choice.
- Develop a publicly accessible national sports/ recreation facilities and amenities directory
- Develop and promote walking and cycling strategies in each Local Authority area
- Ensure that the planning, development and design of towns, cities and schools promotes cycling and walking with the aim of delivering a network of cycle routes and footpaths
- Ensure that the planning, development and design of towns and cities promotes the development of local and regional parks and recreational spaces that encourage physical activity
- Prioritise the planning and development of walking and cycling and general recreational /physical activity infrastructure
- Explore opportunities to maximise physical activity and recreation amenities in the natural environment

5. **National Sport Policy 2018 – 2027; Department of Transport, Tourism & Sport**

Sets out the vision for Irish Sport up to 2027. Some of the actions within the National Sport Policy that link with this database project include:

- **Action 13:** Apart from investment in traditional sports infrastructure we will examine how the wider natural and built environment can facilitate participation in sport and physical activity. This consideration will also take account of the type of activities towards which adults are increasingly gravitating such as running, cycling, outdoor adventure pursuits, recreational walking, etc.
- **Action 18:** We will periodically conduct a nation-wide audit of sports facilities (whether publicly or privately owned), with the first such audit to be completed within 2 years of the publication of this policy. These audits will guide decisions regarding the sport capital projects to be prioritised for public funding and we will also consult with NGBs in relation to any further actions required. Local Authorities will conduct the audit at a local level, as part of their role in implementing their Local Sports Plans. As part of the audit we will work with relevant stakeholders to develop and maintain a fully-accessible, comprehensive and up-to-date national database of sports facilities which will also be translated into a web-based portal to serve the needs of the public.
- **Action 34:** We will foster and encourage collaboration within the sports sector and between sport and other sectors through training and development initiatives and through the provision of financial and other incentives to stimulate collaborative behaviour at all levels of sport. We will work on an all-island basis in this regard. We will seek to develop a stronger relationship with the education system in particular in our efforts.

6. **Outdoor Recreation Plan for State Lands and Water in Ireland 2017 – 2021**
(Ref: https://www.coillte.ie/media/2017/06/ORP_Screen.pdf)
The vision in this plan for the Outdoor Recreation Plan is: Improved recreation management and development of state lands and waters in a strategic and sustainable manner leading to increased participation in outdoor recreation, benefitting society and

the national economy, and delivered through a partnership of Public Bodies, that complements the remits of the participating organisations.

7. The **Marine Spatial Plan** will set out the spatial framework for human activities in the Irish marine environment and will be a key instrument for regulatory authorities and policy-makers. The **National Marine Planning Framework** – Baseline Report (https://www.housing.gov.ie/sites/default/files/publications/files/national_marine_planning_framework_baseline_report.pdf) was published in in Q4 of 2018 and it has identified relevant data which could help building the marine plan and which will be gathered in a repository. The data within the scope of this feasibility study would be important for that framework.

8. Fáilte Ireland's **Tourism Development & Innovation: A Strategy for Investment 2016-2022** includes under priorities for investment 4.1.8:
Strengthen the role of Digital: Technology is playing an ever increasing role in all stages of the visitor journey both before, during and after the visit. This Strategy will seek to support projects which improve content (imagery, stories etc) and capability (apps, websites etc) which ensures the sector operates to 'best in class' in the digital space.

9. The **Public Service ICT Strategy** includes a "Data as an Enabler" strategic pillar, calling for the improved management of data across the Public Service supporting better administration and decision making.

10. The **Public Service Data Strategy** (2019-2023) includes the following principles that this feasibility study needs to be cognisant of:
    - Principle 1: Data is discoverable by citizens, businesses and the Public Service
    - Principle 2: Data is processed in a transparent manner
    - Principle 3: Data that can be made public should be made public
    - Principle 4: Data is reusable
    - Principle 5: Data is accessed and maintained via base registries
    - Principle 6: Data is accessible through APIs to support interoperability
    - Principle 7: Data is demonstrably processed in line with legislation
    - Principle 8: Data is effectively governed
    - Principle 9: Data is collected and processed digitally
    - Principle 10: Data is used to support evidence- based decision making
    - Principle 11: Data is processed in a secure and private manner

11. The **eGovernment Strategy 2017-2020** sets out a vision that utilises technology to improve citizen and business interactions with Government through better digital and data usage, improved capabilities, and enhanced governance

12. The **National Statistics Board's Strategy 2015-2020** outlines the importance of joined-up data for joined-up Government. It describes how the ability to make successful national policy decisions and to be accountable to citizens can be enhanced by the increased availability, breadth and quality of information, evidence and insight

13. Our **Public Service 2020** includes an action to "Optimise the use of data" – outlining how data will support better service delivery, better decision making, increase the ease of access to services and drive efficiencies.

14. Geospatial data is a key enabler for evidence-based decision making and according to the **United Nations Committee of Experts on Global Geospatial Information Management** (UN-GGIM, 2015) it is no longer just used for mapping and visualisation, but also for integrating with other data sources, data analytics and modelling.

The list of primary policy drivers is summarised in Figure 1 below.

Figure 1

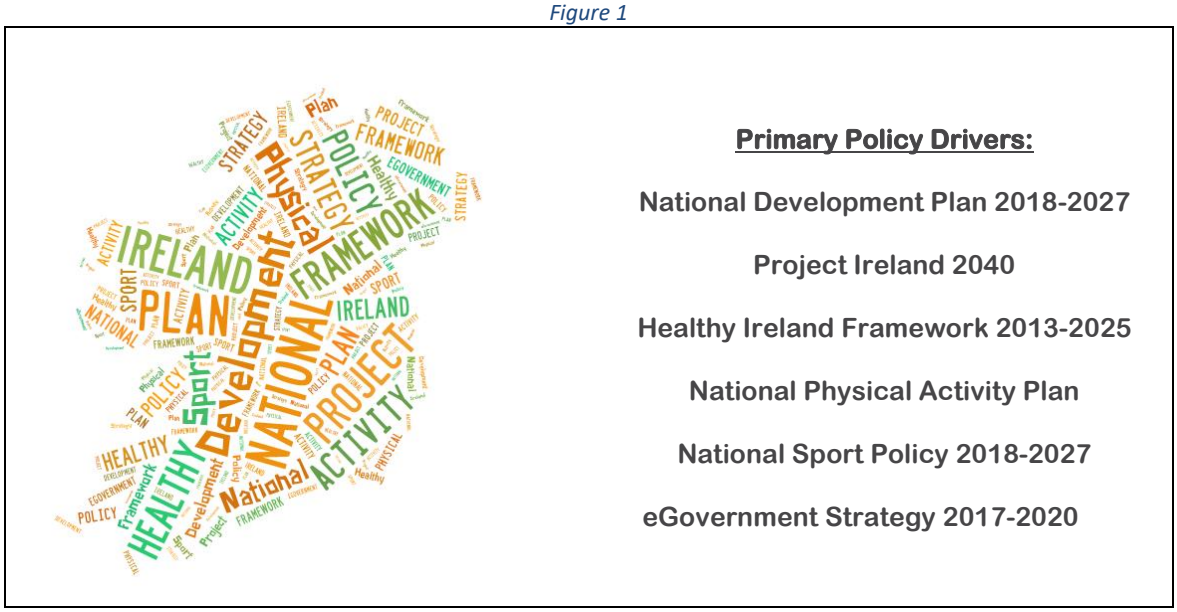


Figure 1: Overview of Policy Drivers

3. Consultation Process

3.1. Target Users and Benefits

The first stage in the consultation process was to define the target users and benefits of a centralised database of sport and recreational amenities. Balancing the target users and benefits of this initiative against the work required to implement it, would be the fundamental factor in making an informed decision on whether this initiative is feasible and worth progressing.

When it comes to target users for this information the first notable statistic quoted was that around 30% of the population reach the recommended levels of physical activity to maintain a healthy lifestyle (http://ec.europa.eu/assets/eac/sport/library/factsheets/ireland-factsheet_en.pdf). Furthermore, alarmingly high levels of sedentary behaviour have recently been highlighted among teenagers in Ireland with 79% of their total day or 19 hours spent lying or siting down (https://www.ul.ie/research/content/research-impact-health-0). One of the primary roles of the publication of this information would be to address that sedentary lifestyle and encourage people to take regular exercise. However, there is currently a lack of consolidated information on Sports & Recreational amenities in Ireland. A wealth of information is collected and maintained in each local authority area but there is an absence of a single consolidated and regularly updated data asset for all of Ireland. As a result, it can be difficult to find Sports & Recreational amenities to a consistent level of quality across all of Ireland and even more difficult to find ancillary information about those amenities and other facilities nearby.

This initial analysis identified broad categories within which the targets users would benefit:

- **Data Discovery** – the publication of accurate Sports & Recreational amenity information would be useful to Failte Ireland, families and the public in general to promote the awareness of sport and recreational amenities, get people more active and potentially to allow feedback to be provided on those amenities. A range of ancillary information on those amenities would be extremely useful such as age suitability, opening times, disabled access, etc although the practicality of keeping this data accurate is recognised as a challenge
- **Asset Management** – the use of this data as an operational resource within government could provide substantial business value to central government agencies such as National Parks and Wildlife Service, Ordnance Survey Ireland and OPW, local government agencies and local sports partnerships. Indeed, this could be used in parallel with the ability to provide feedback on assets such as walking trails to identify and rectify any issues with those trails by the appropriate public body
- **Emergency Management -** The publication of information on sport and recreational amenities across Ireland and more specifically trails would greatly benefit the emergency services en-route to an incident or accident on a trail. As well as knowing the start and end points of the trail, if all other access points were made available then the emergency crew could save valuable time in reaching the incident.
- **Planning** – this data could also be used to identify shortfall of sport and recreational amenities or facilities across Ireland. In way this, public bodies could use this data as a consultation tool to look at options for addressing these shortfalls. For example, someone in a government department could readily combine map layers showing existing amenities, environmental data, demographics, census statistics and housing planning to gauge where investment is needed to ensure that evidence-based policy is implemented.

- **Open Data** – the free and open publication of Sports & Recreational amenity information using either existing open data frameworks such as GeoHive, Open Data sites of each local authority or open Application Programming Interfaces (APIs) would present numerous opportunities for third parties to develop useful targeted apps to promote knowledge of Sports & Recreational amenities and areas of interest nearby.

The diagram in Figure 2 below illustrates a CATWOE analysis to elicit these target users and uses for the database. CATWOE stands for customers, actors, transformation process, worldview, owners and environmental constraints. CATWOE was defined by Peter Checkland as part of his Soft Systems Methodology.

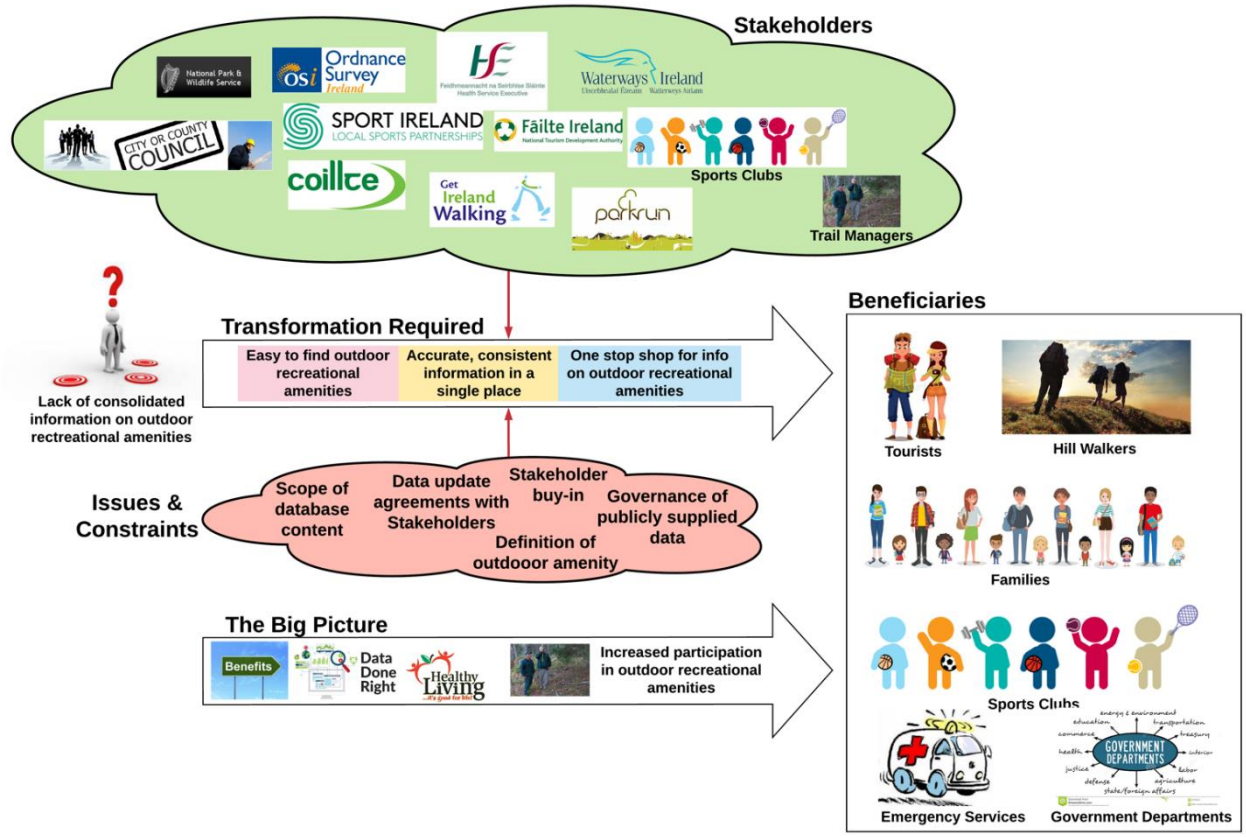


Figure 2: CATWOE Analysis to elicit target users and uses for the Sports & Recreational Amenity Database

3.2. User Personas

As a result of this analysis, some typical user personas for prime target user groups were created and are illustrated below.

3.2.1. Public User

Doug is able search the online portal and find suitable amenities for him and his family, based on location, activity type and other factors. He can plan a full day out by finding transport links, nearby restaurants, toilets and other facilities.

3.2.2. Infrastructure Planning & Management

Eva can use GeoHive to overlay recreation amenity data with population statistics and environmental mapping in order to effectively plan future investment. Her team can also use the database to manage existing facilities, such as trails and playgrounds in her area.

3.2.3. Athlete with Disability

Kevin can find recreational amenities that are suitable to his interests and needs, as well as suitable parking and options to charge his electric car.

3.2.4. Oversees Tourist

Hannah has come to Ireland mainly to walk a long-distance trail but has used the online portal to discover festivals and other activities near where the walk finishes. She decides to stay longer in small towns and villages.

3.2.5. Emergency Responder

Called to a bike accident, Roger can find and be guided to the nearest access point along the trail that his vehicle can use. This data is not visible to the public, to prevent unwanted parking, but has been made available to emergency services.

3.2.6. Social Prescribing

Attending to a patient suffering from depression, Aine would like to promote sports and recreational amenities, activities and clubs in the locality to address the patient's low level of social inclusion and generally improve their health outcome.

3.3. Initial Consultation

This initial analysis created enough context to stimulate discussion in consultative workshops. The next stage was to identify the consultees themselves and produce a simple questionnaire to generate some feedback and set the scene for these workshops. The list of consultees was spread across central government agencies, local authorities and a range of sports governing bodies.

The questions within the questionnaire were carefully constructed so they were easy to complete but still provided useful input and were open enough to provide useful collateral for the consultation workshops. The questions were:

- Do you create or maintain any information that would be relevant to a database of Sport & Recreational Amenities in Ireland?
- Would you like to share your data relating to Sport & Recreational Amenities in Ireland?
- What data would you be prepared to share regarding Sport & Recreational Amenities in Ireland?
- How often would be you prepared to update this data in a shared database of Sport & Recreational Amenities in Ireland?
- Would you be prepared to meet with us to discuss sharing your data in a Sport & Recreational Amenity Base Registry for Ireland?
- Is there additional information that we could hold in this database that would benefit your organisation?
- Do you have any other ideas on the potential wider uses of the database?
- Please enter your email address and role within your organisation.

The results of this consultation are shown below.

In summary:

- 44 consultees responded to the questionnaire, these included:
    - Central Government - Dept. of Culture, Heritage and Gaeltacht, Health Service Executive, Ordnance Survey Ireland
    - Local Authorities - Longford County Council, Galway County Council, Donegal County Council, South Dublin County Council, Galway City Council, Dun Laoghaire Rathdown County Council, Fingal County Council, Clare County Council
    - Sports Governing Bodies - Irish Surfing, Irish Sailing, Orienteering Ireland,
    - Others - Waterford Sports Partnership, Loughs Agency, Kilkenny Leader Partnership, Bord Na Mona
- 36 of the 44 consultees either create or maintain information relevant to a database of Sports & Recreational amenities
- 32 of the 44 consultees are willing to share their data relating to a database of Sports & Recreational amenities
- 26 of the 44 consultees were willing to meet to discuss sharing their data
- Of the agencies prepared to share their data – 12 would update it annually, 9 quarterly, 2 monthly and 2 weekly

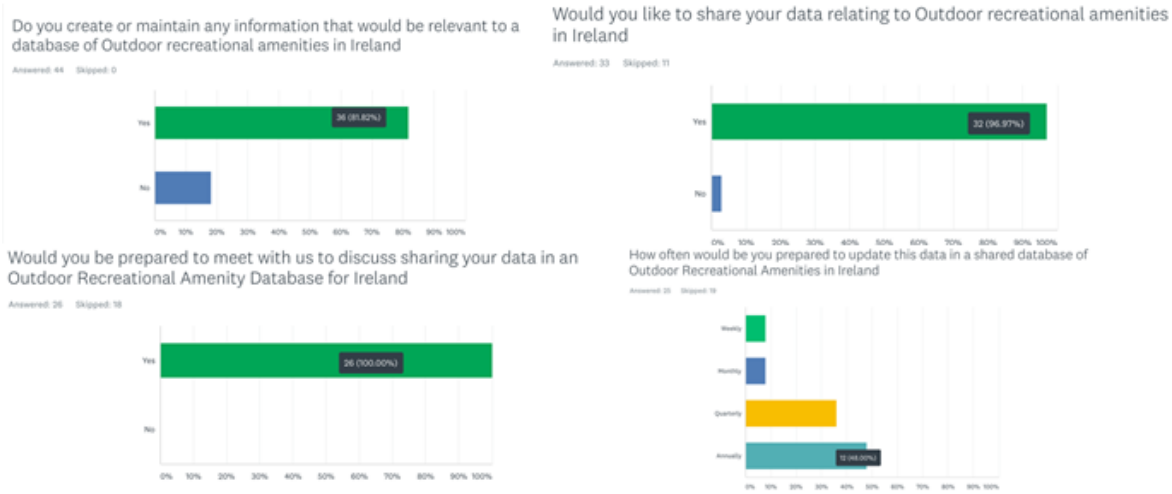


Figure 3: Results of the initial consultation

3.4. Workshops

Consultees were invited to a series of workshops to gauge their support for the initiative, their ability and willingness to provide data and resources and their ideas and suggestions for additional uses and benefits of the database. The list of attendees to all workshops is included in Appendix A of this document and the data that attendees were willing to contribute is recorded in Appendix B.

Figure 4: Photos from workshop 3 in Ordnance Survey Ireland

In general, workshop attendees agreed in principle that the creation of a base registry of sport and recreational amenities had value and was an initiative they would support. There was also consensus that a commitment of resources towards the initiative would require additional internal discussions within each organization before they could confirm. It was agreed that getting the Trails data model accepted by the Open Data Group would give it a governance structure and mandate to be updated by local authorities. In addition, the general opinion was that a sensible approach for the initial scope of the Sports & Recreational amenities database would be to focus on consolidating trails information along with as many data-sets that are already available as possible. It was proposed that the data-sets outside of trails should have a very minimal set of attributes (such as name, web-site link and location/geometry) as this will minimize the amount of data transformation required by data providers as well as avoiding data redundancy by including data elements that not all local authorities maintain.

The potential uses for the database and benefits were extended within each workshop and the resulting use cases are recorded in the next section of this document. As well as the general support and positive feedback received about this initiative, some excellent points were made in workshops about potential issues and constraints. These are recorded in section 5.3 of this document when we examine the overall feasibility of the initiative.

3.5. Summary of feedback & outputs from consultation process

This section will summarise the main outputs from the consultation exercise.

Item	Area	Description
1	People	Workshop attendees recorded in Appendix A
2	Data	Data inventory collated and recorded in Appendix B
3	Use Cases & Benefits	All feedback recorded in Appendix C and illustrated in the summary of use cases in section 4 of this document
4	Organisation	Each participating organisation will need to provide a commitment of data and resources to populate and maintain the centralised database
5	Scope	The data model should be designed in an extensible manner so that it can support all sports and recreation amenities and club information but this data will not all be populated in phase 1
6	Scope	An achievable scope for phase 1 of the initiative would be to collate trails information along with as many existing open datasets as possible from each contributing organisation
7	Data Model	Data-sets outside of trails should have a very minimal set of attributes (such as name, web-site link and location/geometry) as this will minimize the amount of data transformation required by data providers as well as avoiding data redundancy by including data elements that not all local authorities maintain
8	Data Model	Draft data model was created and refined as a result of workshops. The model is documented in section 4 of this document
9	Data Model	Getting the Trails data model accepted by the Open Data Group would give it a governance structure and mandate to be updated by local authorities
10	Data Model	A standard schema that could be populated by all data providers is fundamental to the approach as data structures will be inconsistent across local authorities and especially across county boundaries
11	Data Model	The standard schemas created for data providers to populate should consider the fact that not all data providers will have a GIS, some will not provide spatial information at all, it will be in the form of spreadsheets and therefore standard templates are required for data provision.

Item	Area	Description
12	Data Ownership	The data itself will still be owned by the data providers and it will be their responsibility to provide the data on a regular basis and resolve any issues with that data. A central data manager will be responsible for coordinating the supply of the data and the consolidation of that data into a central database.
13	Data Quality	Metadata recording the accuracy, update frequency and quality of the data within the model is required to prevent a loss of confidence in the data
14	Crowd-sourcing	Crowd-sourcing information from the public will help the overall model stay up to date and relevant. This could be rolled out in phases, i.e. not at all in phase 1, textual feedback and comments in phase 2 and perhaps GPS tracks for trails in phase 3
15	Data Quality	A specification is required for the digitisation of trails that dictates the recommended data capture specification.
16	Scope	The scope should focus on collating trails information in phase 1 along with as many existing open data-sets that hold sites and amenities information. Information on activity providers and other services should be contained within the data model but will not be actively populated in phase 1.
17	Data Management	Various levels of data governance would be required within the system. For example, data from data providers such as local authorities would require a different level of QA than data supplied from the general public

4. Benefits

One of the outputs from the consultation process was a fuller and more refined set of benefits and uses for the base registry of sport and recreational amenities. There were two main objectives to this analysis:

- to allow the feasibility of the initiative to be assessed based on the tangible benefits
- to ensure that the data model being developed takes account of each of these potential benefits and uses.

Even in the initial consultation stages, it was clear that the benefits of this initiative were wide ranging and they broadly divided into two distinct categories…

(i) Public benefits – one of the core objectives is to promote and increase physical activity through the provision of accurate information for the whole of Ireland. It is important to note that this public information should not necessarily be through a single communication channel such as GeoHive. Instead it should be published in a variety of ways so it reaches the communication channels appropriate to each individual. This would include open data made available so that app developers can produce focussed regional applications.

(ii) Government benefits – many of the benefits of creating the sports and recreation base registry are for process improvements within local and central and government agencies. For example, a central base registry of trail information would allow the various stakeholders responsible for those trails to carry out and record inspections and communicate issues to the responsible body. It would also be a very powerful tool for investment planning, allowing intuitive combination of data from many sources, e.g. existing infrastructure with census projections and tourism figures.

Indeed, the consultation brought out so many benefits that this was deemed worthy of a section on its own. In addition, a set of proof of concept (PoC) web applications were developed in parallel to the consultation process and these are shown in this section to illustrate the various use cases. The PoC's supported the process by stimulating ideas and refining usage scenarios into tangible benefits. Those refined usage scenarios are categorised and described in the sections below.

4.1. Recreation Planning

One of the major benefits of establishing a base registry of sport and recreational amenities in Ireland would be the ability for local authorities and other responsible agencies being able to highlight gaps in provision and plan new amenities such as greenway planning, cycle lane planning, opportunities for new walking routes or even opportunities to repurpose existing facilities. This is illustrated in Figure 5. In this way, new facilities would be established based on real need and robust evidence-based policy decisions could be made and justified.

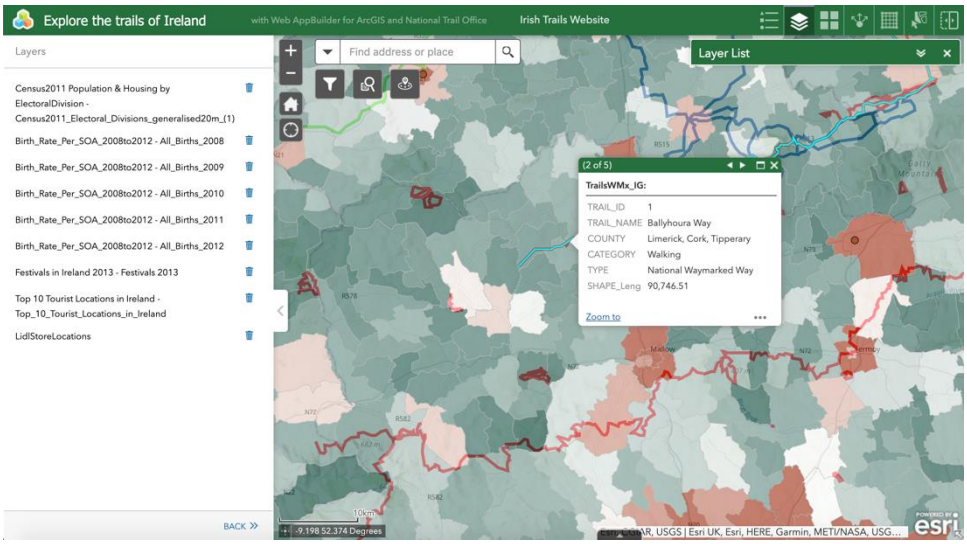


Figure 5: Map Viewer integrating walking trails with demographics

4.2. Safety

Another scenario is the use of a base registry of sport and recreational amenities is with public safety. Maps could show seasonal weather conditions along the trails (as illustrated in Figure 6)

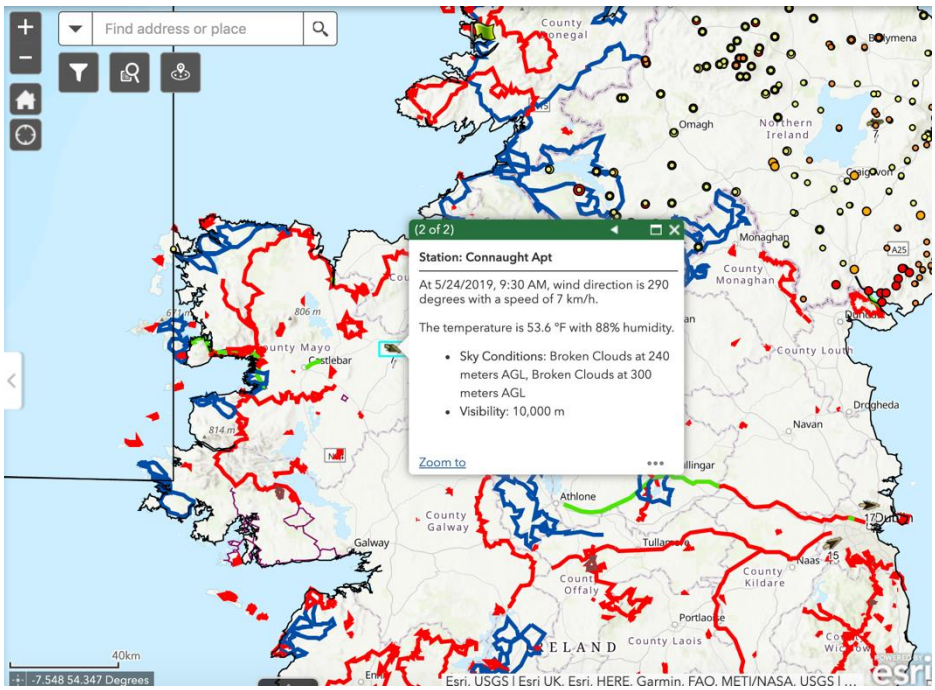


Figure 6: Map showing trails and latest weather information

It would also be possible to display all access points on a walking trail for emergency services to allow them to go directly to a person's location in the event of an incident on the trail or could be used to assess flood risk, by adding flood risk layers on top of the amenity information.

4.3. Health

One of the biggest potential benefits to easy access to a base register of amenities is from a health perspective. If the data were made available as a set of web services then it could be accessed using the GeoHive map viewer, focussed health-related map viewers or apps. This would result in more people being able to access the information and would direct contribute to promoting healthy activities. In addition, health practitioners themselves could be provided with this information and could inform their patients not only that they needed to be more physically active, but also where to go in the local area. It should also be possible to collate and analyse patterns and behaviours of use regarding the amenities in order to develop targeted marketing campaigns to address underuse by a particular section of the local demographic. It would also be easier to publish accurate information on facilities for disabled access at amenity sites for example accessible trails and disabled parking availability. In Figure 7 we show that local events beside amenities could also be easily shared such as festivals in the area and the following figures show how the public could also easily search for amenities in their area.

Figure 7: Walking trails and local festivals

In addition, one of the most impactful uses of the data would be for General Practitioners (GP's) when engaging with patients who would benefit from a more active lifestyle and could be used as a part of their 'social prescribing' to improve their health outcomes. Features could be made available within the portal in which the data is published to easily allow GP's to find recreational amenity sites and information in their, and their patients, localities. The additional information about amenities is also extremely beneficial in this scenario, such as age suitability, opening times and disabled access. More information on social prescribing is included in the next section.

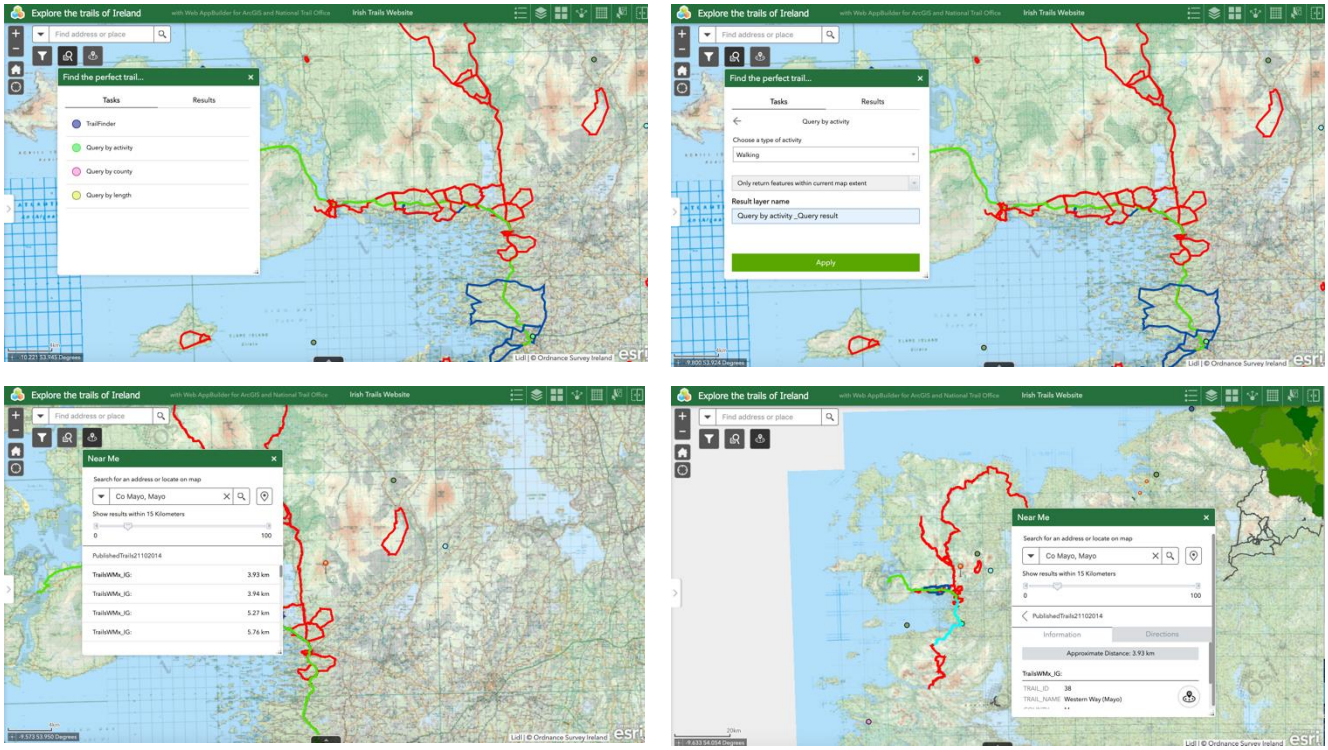


Figure 8: Engaging with the amenities data to show facilities near me or in a specific area

4.4. Business Management

A consolidated national base registry of sports and recreational amenities would also provide benefits in a variety of business planning scenarios that are not currently possible as a definitive source of national information is not being actively managed and maintained. Scenarios such as the management of assets along a trail, general trail management, conservation awareness and event management would all be made possible by access to a single source of the truth of amenity information. This would also align with the Public Services Data Strategy principles of collecting data once and using many times for a variety of purposes.

The following screenshots show just one of these scenarios, namely, asset management of trails.

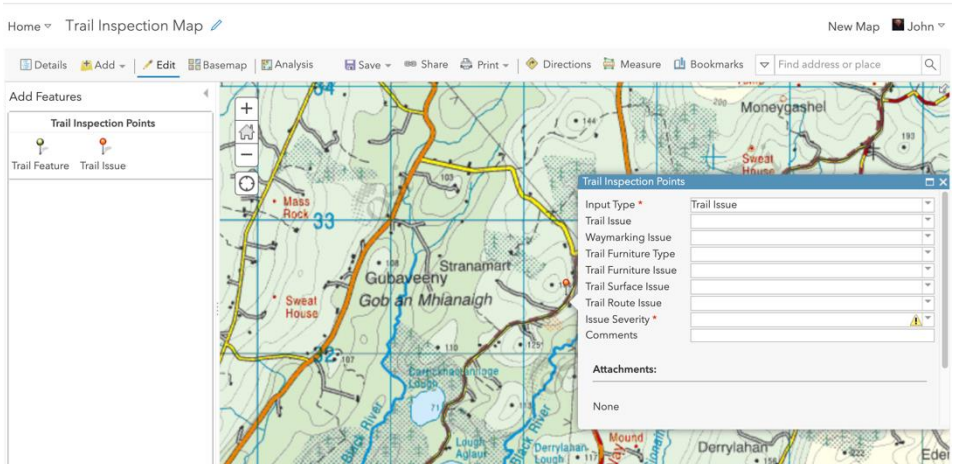


Figure 9: Map Viewer allowing users to add trail issues

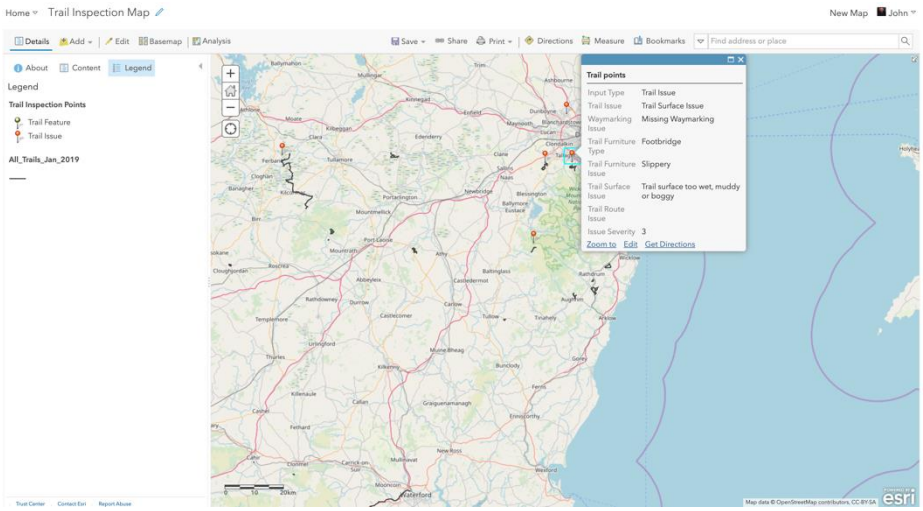


Figure 10: Map viewer showing issues added along a walking trail

The likely user in this scenario would be local authorities with inspectors having the ability to add trail issues with mobile devices in the field and then the responsible agency would be able to visualise the issue. Once the issue had been resolved, the status of the issue could be updated to ensure all stakeholders are informed. This would be a workflow constrained to internal government agencies in the initial phases of the implementation, but it could be extended to allow for issues from the public in later iterations.

4.5. Business Planning

Another benefit of a consolidated set of sport and recreational amenities is that it would allow for a variety of business planning scenarios such as infrastructure planning, development planning, conservation planning and the promotion of areas of investment. The following figures show typical dashboards that could be developed using the data to look at trends and patterns (in the cases below it is of issues on trails) and these insights could be used to develop evidence-based policy.

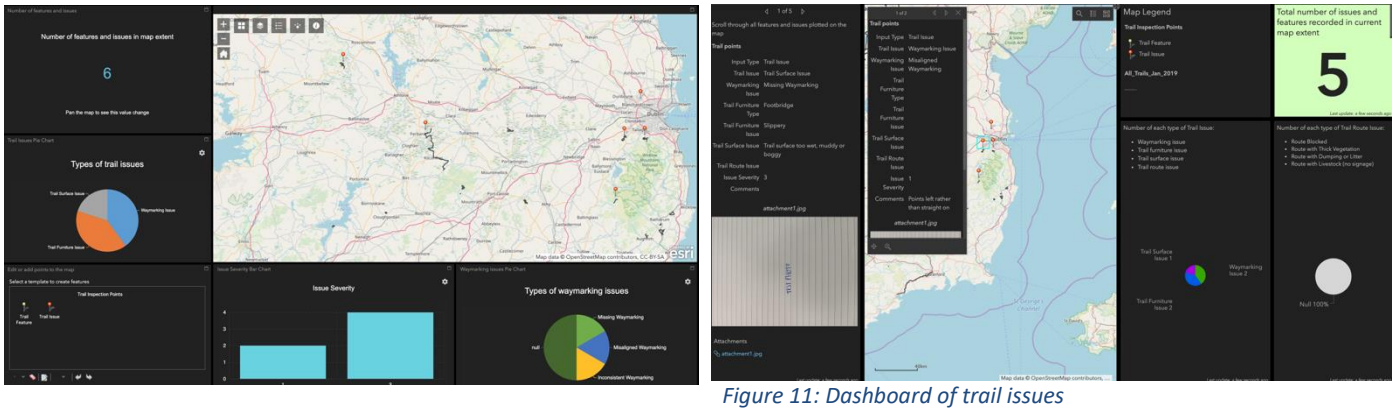


Figure 11: Dashboard of trail issues

4.6. Public Engagement

Access to a definitive source of sports and recreational information would provide multiple opportunities for public engagement. As well as the scenarios shown in the health section above, amenity information could be made available in a range of channels from generic map viewers such as GeoHive to focussed apps that could be developed for specific areas. The figures below show how an interactive storymap could be developed to engage the public in a specific trail and this type of innovative presentation could be applied to inform the public on aspects of amenities such as displaying access points, parking locations, developing trip itineraries, displaying opening times and related facilities and events in the local area.

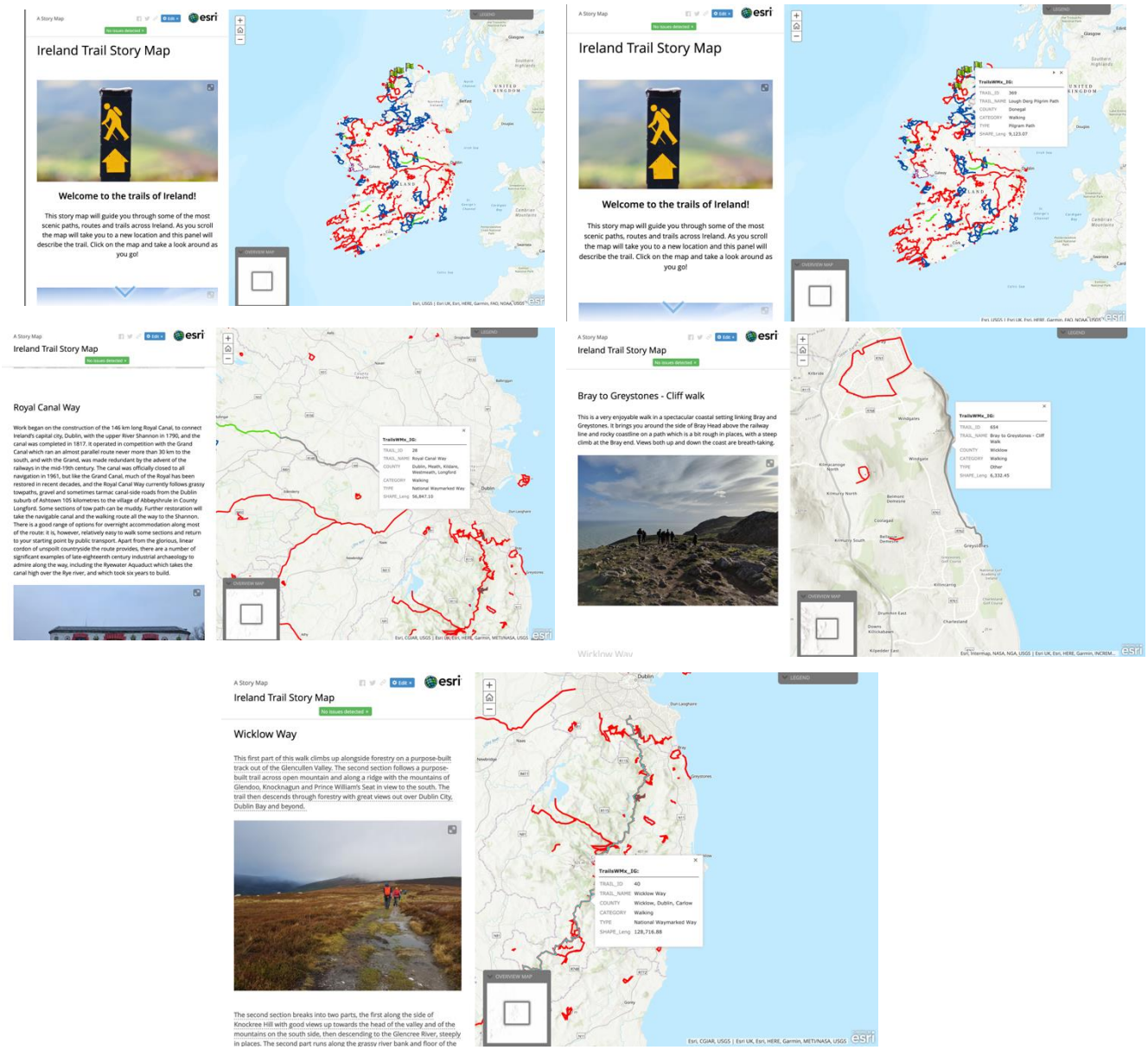


Figure 12: Example of an interactive storymap of an amenity

All of the benefits identified in this section are summarised in the figure below. It is evident that the benefits of this initiative are many and varied and they provide opportunities for substantial cost savings, meaningful cost avoidance through the mitigation of risk, better use of existing services and the provision of new services through the development of evidence-based policy.

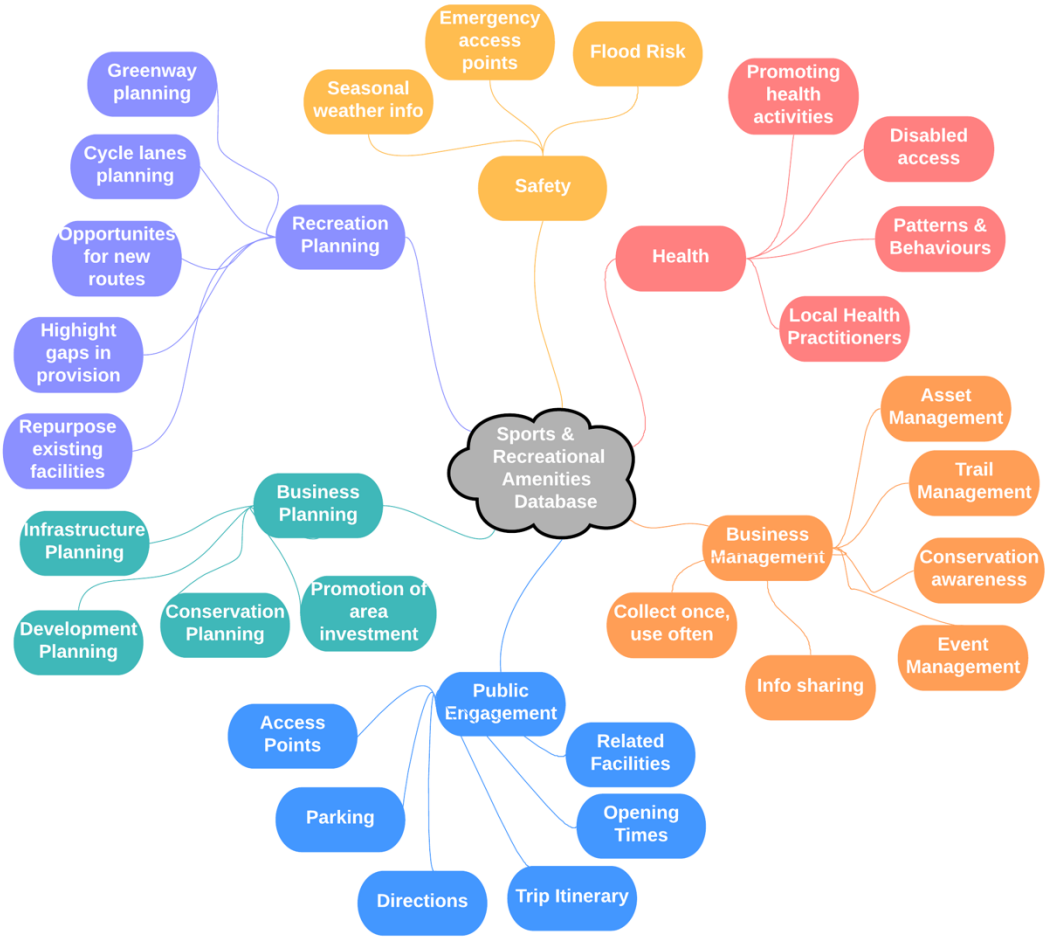


Figure 13: Benefits of the Sports & Recreational Amenity Database

5. User Journeys

This section will aim to further clarify how the main user roles will interact with the national base registry of sports and recreation amenities. Each main role is listed below with their user journey in interacting with the registry to show how their life will be made easier by having this information available nationally and regularly updated.

5.1.1. Social Prescribing

Social prescribing, sometimes referred to as community referral, is a means of enabling GPs, nurses and other primary care professionals to refer people to a range of local, non-clinical services. It aims to address people's needs in a holistic way that allows them to take greater control of their own health. Social prescribing is designed to support people with a wide range of social, emotional or practical needs, and many schemes are focussed on improving mental health and physical well-being. Those who could benefit from social prescribing schemes include people with mild or long-term mental health problems, vulnerable groups, people who are socially isolated, and those who frequently attend either primary or secondary health care.

Having an accurate, up to date, updated and localised understanding of what exists in the community is a critical foundation stone of social prescribing. Accurate and engaging digital information on sport and recreational amenities could directly support citizens in their social prescribing journey whether for weight loss, increased exercise, managing diet, lower level mental health issues such as mild anxiety, sleeplessness, even social isolation. In addition, this would relieve some burden existing healthcare services.

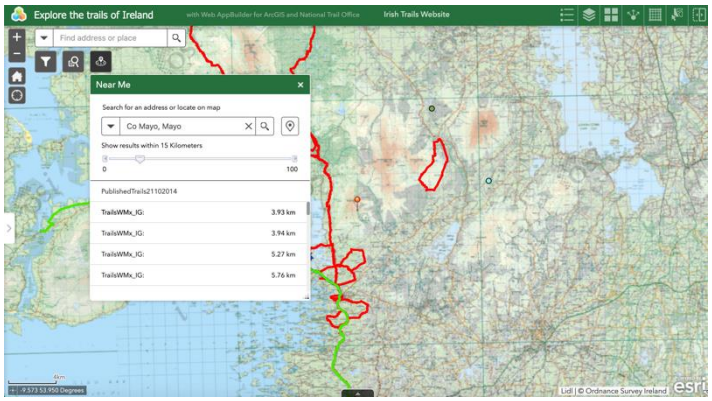


Figure 14: Example of how the Amenity data could be used by GP's to find activities in patients' localities

To address this, we would aim to make this information easily available to General Practitioners, Occupational Therapists, Psychologists and other primary healthcare professionals, perhaps even identifying ways in which the portal we develop could easily be integrated with existing GP systems.

In addition, proactive steps to deliver social prescribing could be achieved by using population-based analytics for communities in Ireland, drawing on data from all sectors, to monitor the impact on citizens and provide population health and social insights.

5.1.2. Public access

The public will be able to access the information they need through OSi's GeoHive or other online portals (websites) in a user-friendly map-based format. They will be able to search by a wide range of factors, including amenity type, location, suitability, and disability access. It will be possible for them to overlay and search other data, such as weather forecasts, transport links, accommodation and so on. The data will be available for inclusion in many types of apps and websites, so the full spectrum of potential users can be targeted, e.g. 'Trip Advisor' style feedback, games/challenges for kids, export to fitness apps etc.

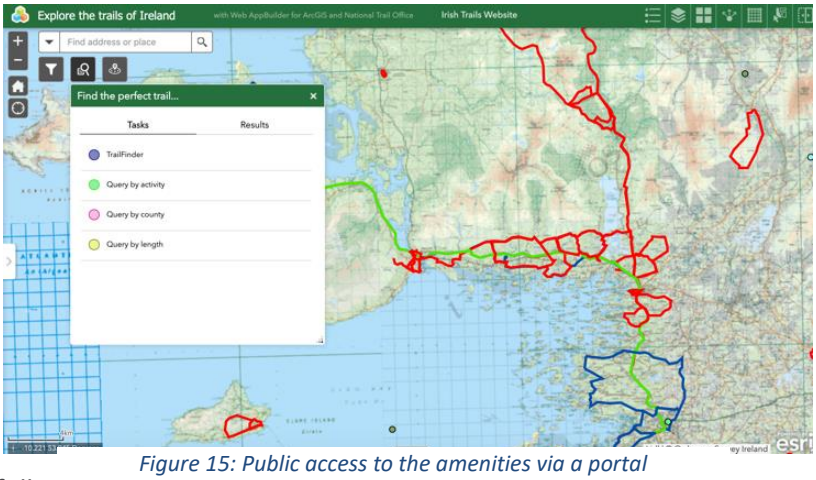
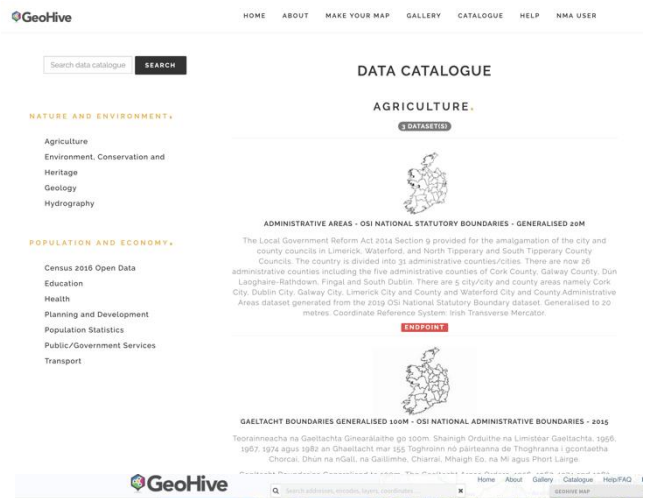
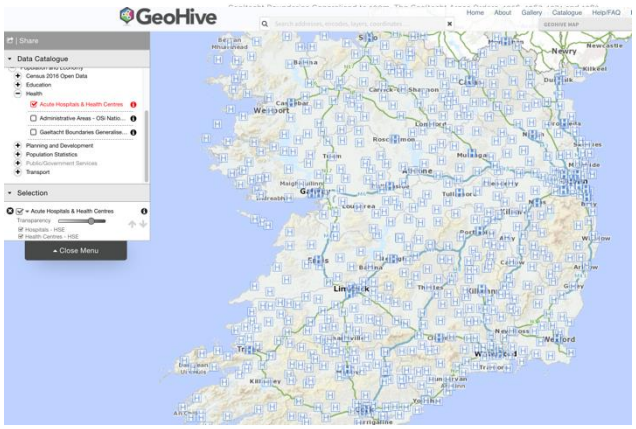


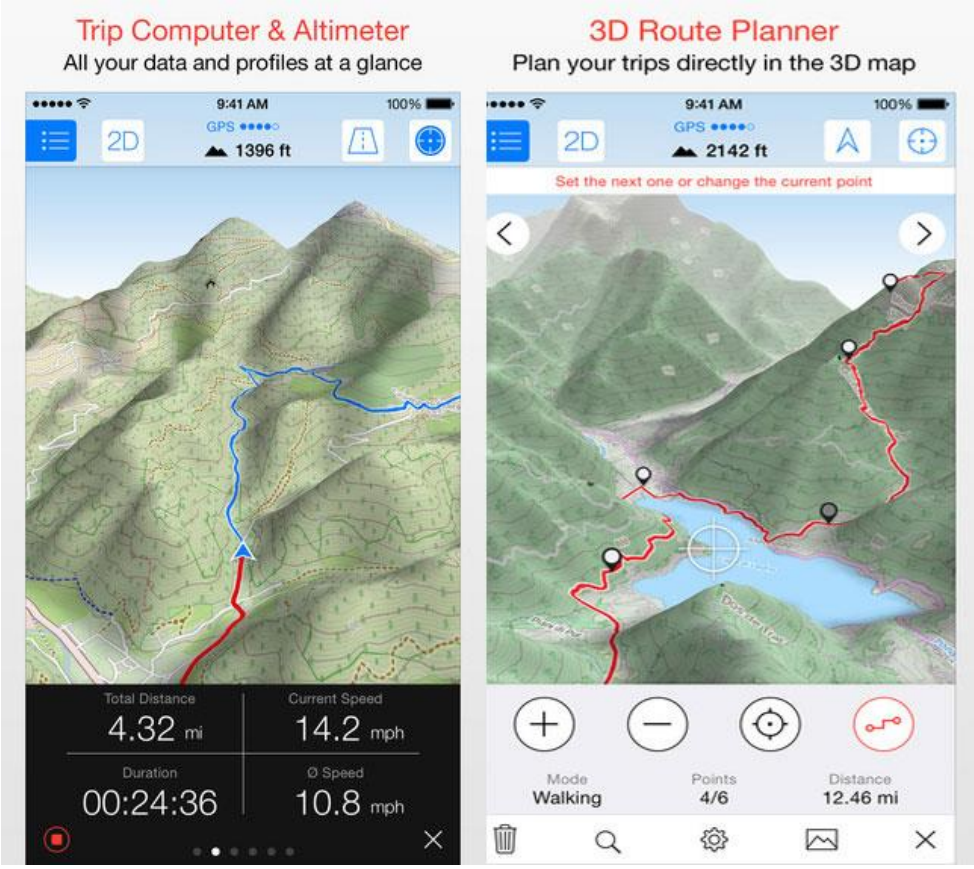
Figure 15: Public access to the amenities via a portal





These screenshots show how the data would be provisioned by GeoHive. A new content category for Sports and Recreation data would be added to the data catalogue so that users could easily find the data and it would also be available within the GeoHive map viewer within the Sports and recreation category.

In addition, as the data will be available as public web services, any app developer or website developer will be able to embed them within focussed applications as illustrated below…



This is probably one of the most exciting aspects of the initiative as it will lead to innovative use of the amenities data in ways that are not currently provided or even envisaged. As an aside, Transport for London has 13,000 registered developers to use its open data services and estimates that is helping London's economy by up to £130m a year and the services and applications developed using its open data services are improving journeys, saving people time, supporting innovation and creating jobs.

5.1.3. Tourists

As the data will be provided as freely available web services, it will be possible for Failte Ireland and other tourist websites to harness this source of accurate, definitive amenity information for all of Ireland. This will provide the ability to carry out faceted searches, a key aspect of good tourism websites which directs the user, not only to what they searched for but also to related topics. This maximises tourists experience and the benefit to the Irish economy. An example of a trip planner application which does exactly that is shown in Figure 16.

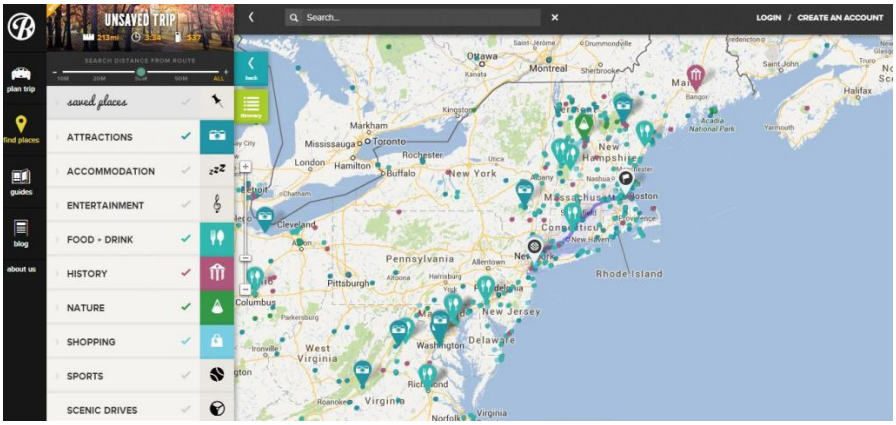


Figure 16: Trip Planner application

5.1.4. Asset Managers

Asset managers will be able to access all the data for use in-house and between agencies. Combining and layering this data with existing information from existing sources will give a very powerful, visual tool for understanding, planning and managing a wide range of resources. For example, if strategically planning investment in sports amenities in a county, one could overlay existing infrastructure with population projections, environmental data and zoning maps. The system, being based on accurate geographical data, would also allow for asset management: Problems identified in amenities (from trails to playgrounds) could easily be logged on a phone, flagged centrally, and resolutions tracked.

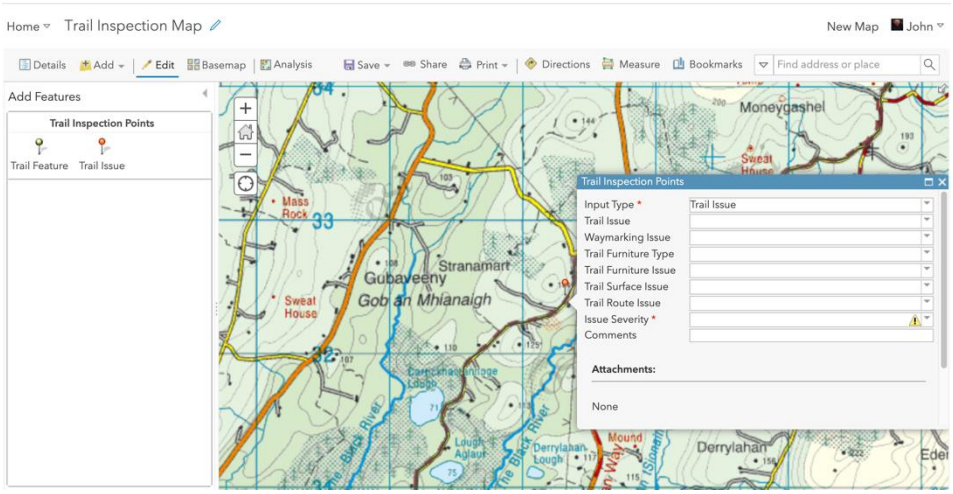


Figure 17: Ability to add issues to amenities

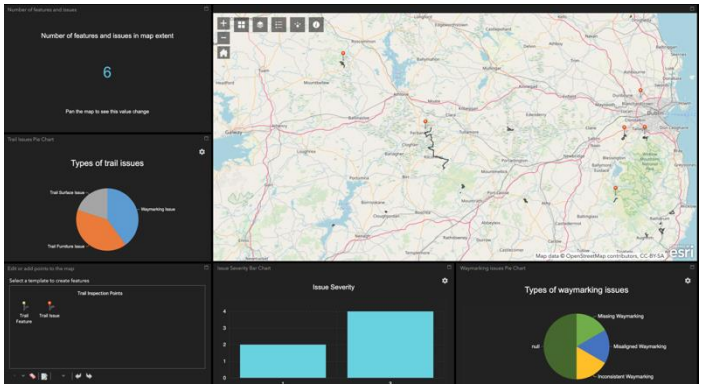


Figure 18: Management dashboard of amenity information

In addition, management dashboards could be developed showing the use of current amenities and be used to identify gaps in provision and trends or patterns of use. In this way, evidence-based policy decisions could be made and easily justified and visualised.

5.1.5. Emergency Services

Emergency services would also be able to harness this data within their existing applications or focussed apps to be able to locate injured walkers for example as well as all access routes to a trail as shown in Figure 19 this type of capability could save valuable time with the golden hour, i.e. the period of time following a traumatic injury during which there is the highest likelihood that prompt medical and surgical treatment will prevent death.

Figure 19: Example Emergency Services app using amenity data

5.1.6. Data Providers

Data providers will have two options for how they update the data;

(i) Firstly, data providers will be able to directly edit the amenity database by using an online GIS editing application. This capability would suit a data provider with a small number of edits or those who do not have an existing GIS.

(ii) Alternatively, data providers will be able to bulk load data updates (in an agreed and pre-created template) using a GIS data management application. This capability will more likely suit data providers with an existing GIS as they will be updating more information and they will already have GIS software capable of carrying out these operations

An example screenshot of features being added using an online GIS editor is shown in Figure 20

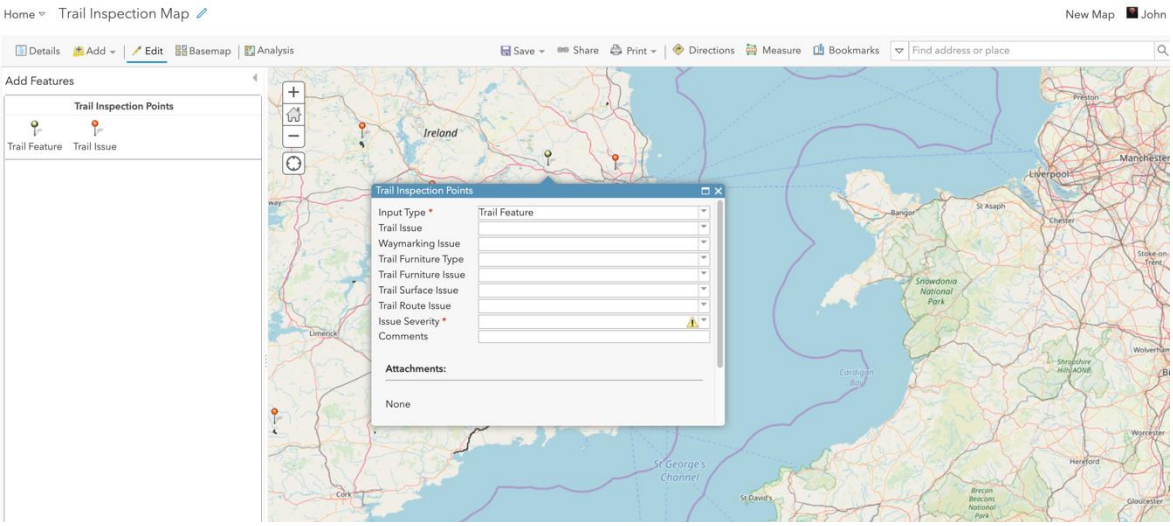


Figure 20: Online editing of a trail

5.1.7. App Developers

App developers would be able to interact with the amenity data as a set of RESTful web services. These web services could then be used within focussed application that are developed for example showing walking trails within a specific region. The added benefit of this channel is that users can be given easy tools on their phone to add feedback or upload their GPX trails of new walking routes. An example of innovative apps that could potentially developed are shown below.

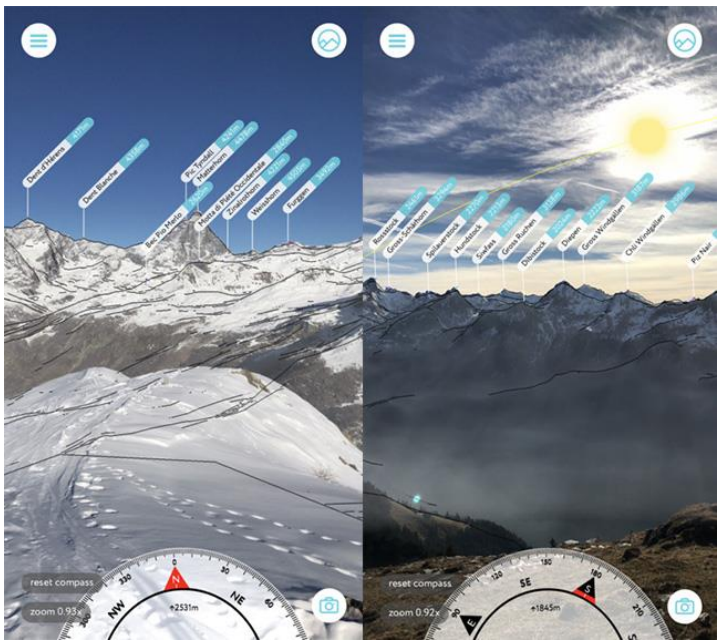


Figure 21: Example of an innovative app publishing the amenity data

In addition, the amenity data would be made available as open data sets in CSV format as this is also an excellent way for app developers to interact with it and create innovative solutions.

6. Requirements

6.1. Use Cases

The next step was to refine these benefits into use case scenarios that essentially look at how these benefits could be realised by incorporating the roles involved within the system and the interactions with the system that each role will have. The first of these is illustrated in Figure 22 and shows the overall system with all roles and their interactions. This is summarised below:

Data Providers – manage their own subsets of the data within the Sports and Recreational Amenity Database and provide updates in a standard format on an agreed timeline such as quarterly.

Local Authority/Government Department – manages Sports and Recreational amenities and wants to maintain those resources and promote them to ensure they are being used by the public. Also wants to carry out forward planning to identify gaps in provision. May also be a data provider.

Inspector – tasked with managing a Sports and Recreational amenity, reports on issues with these resources and ideally records them within the Sports & Recreational amenity database so that action can be taken by the agency responsible.

Public User – wants to view accurate information on Sports & Recreational amenities to plan trips and supply feedback on those amenities.

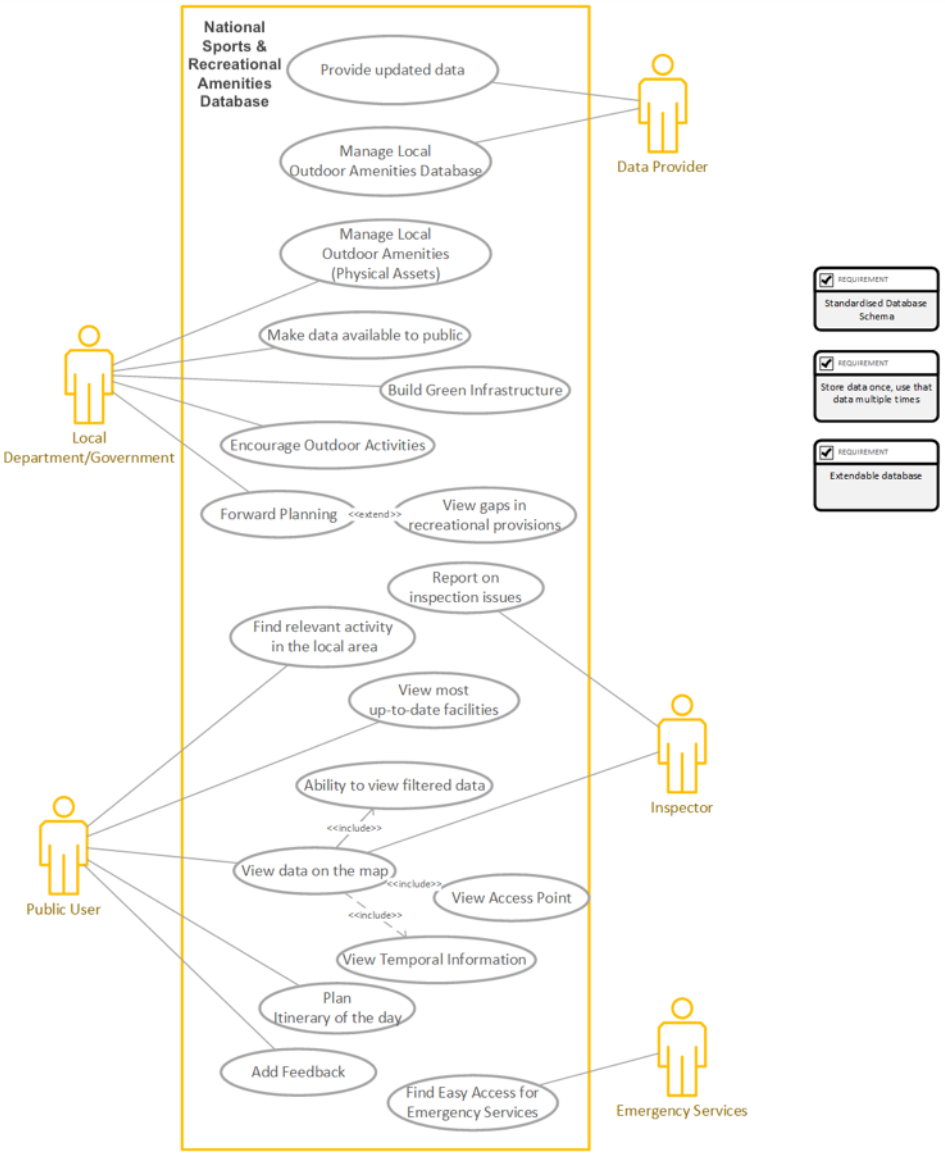


Figure 22: Overview of Sports and Recreational Amenity Database Use Cases

The next use case, illustrated in Figure 23, focusses on public access to the data and the typical interactions that a public user will perform such as viewing available amenities at a specific location and related facilities around it. Key aspects here are that the data will need to be kept up to date and also be temporal to provide opening dates and times. In addition, public users should have the ability to provide feedback in a similar manner to TripAdvisor so that any inaccurate data or issues at the site can be identified and rectified by the responsible agency.

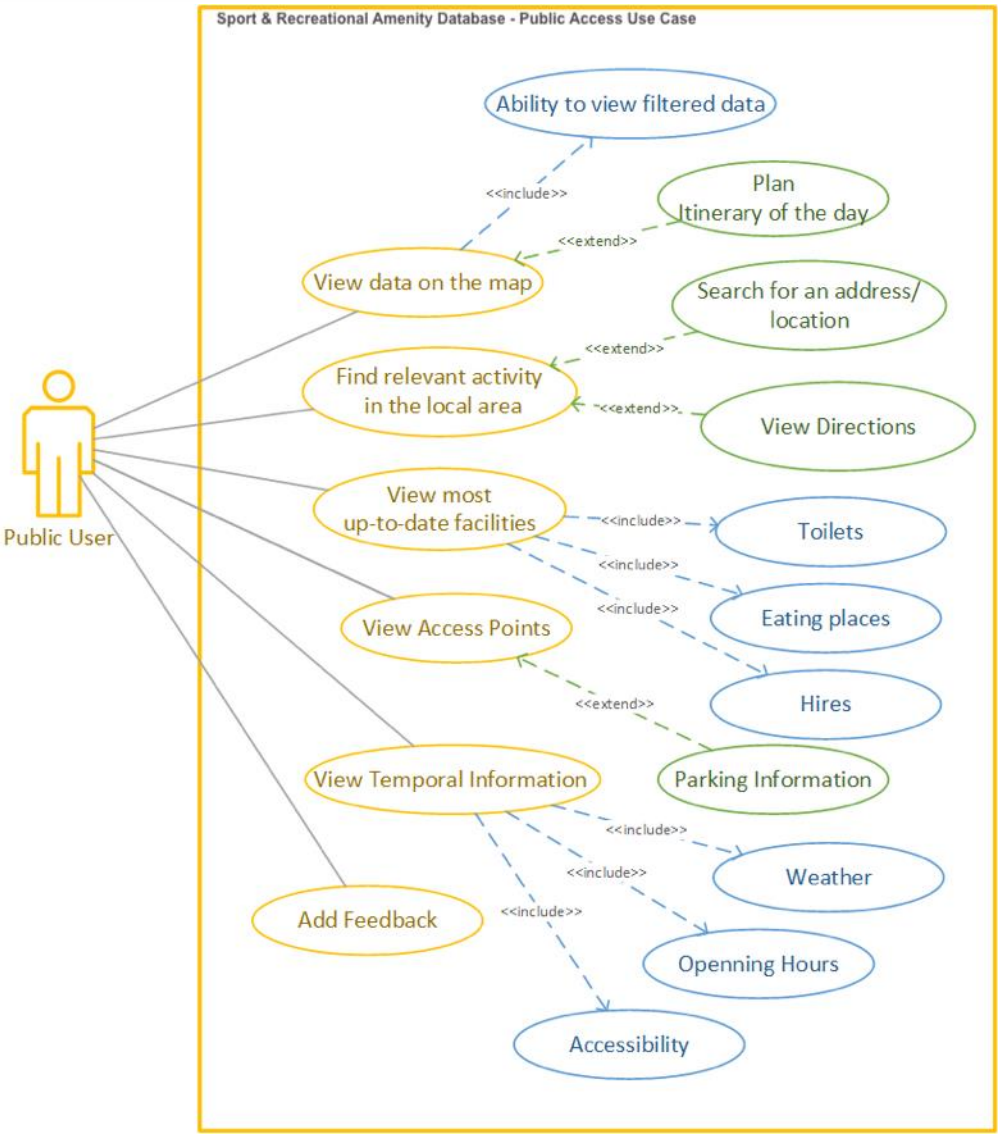


Figure 23: Public Access Use Case

The final use case, illustrated in Figure 24, focusses on the asset management use case in which an inspector identifies and reports an issue at an amenity, possibly in response to some feedback from the public. This would then be passed to the responsible agency to rectify and the database would be updated as repairs are planned and actioned. A final, and very user-friendly step in this process flow would be to notify the inspector, or even the member of the public who may have reported the issue, that it is now resolved.

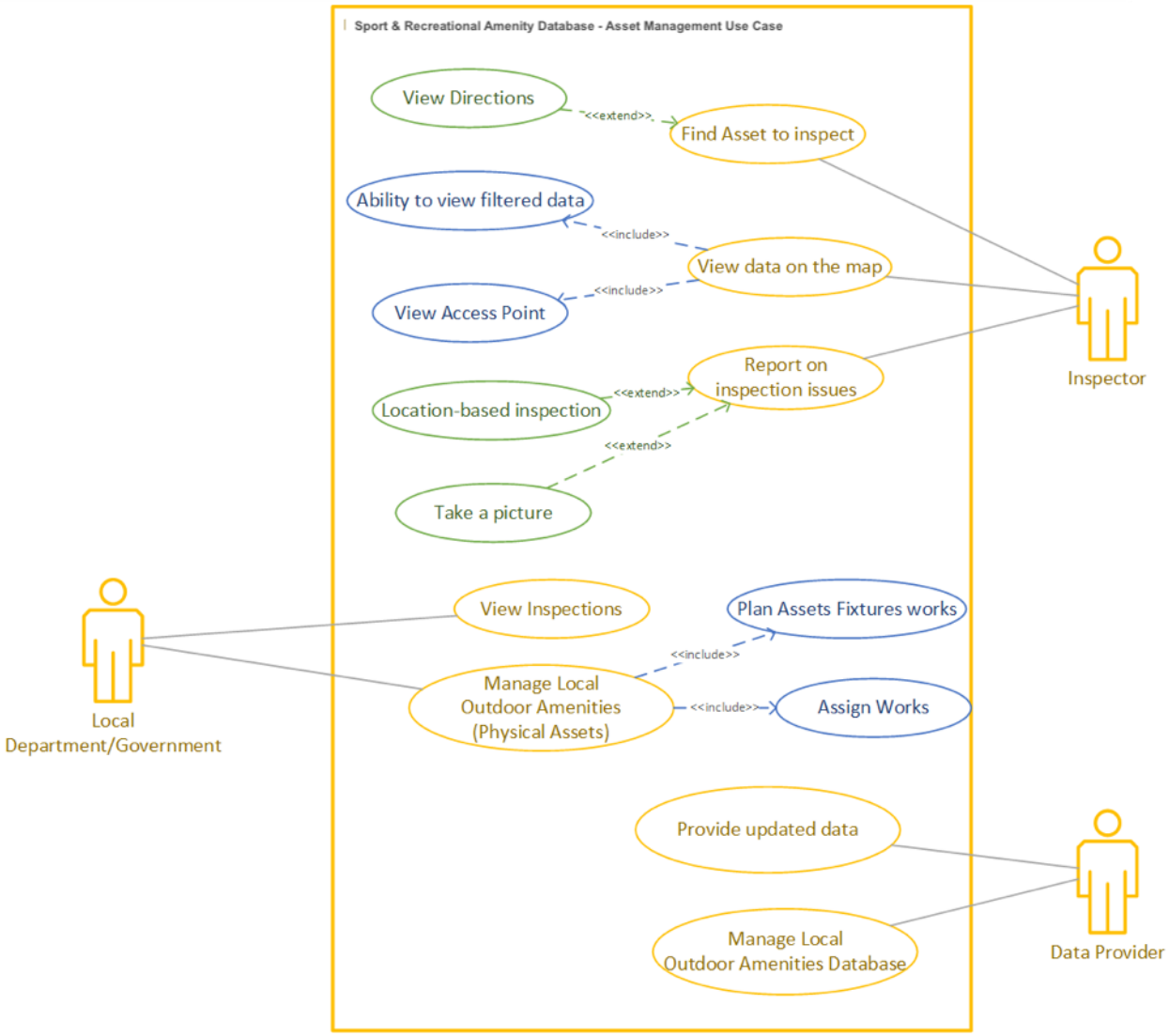


Figure 24: Asset Management Use Case

6.2. Data Model

This section will detail the data model drafted and refined through this feasibility study for the database of Sport and Recreational Amenities. One of the first stages in this process was to construct a data inventory (included in Appendix B of this document) to record the information that consultees were willing to supply to the database. This is illustrated in Figure 25 which also illustrates how two of the main use cases for the database may be physically provisioned in different manners with public access to the data being provided through the GeoHive portal while operational use of the database for applications such as asset management would be more appropriately hosted elsewhere in a dedicated facility for this purpose.

Essentially a view of the source data would be shared to GeoHive. This is also in line with the purpose of GeoHive which is to collate links of already available authoritative spatial data, not specifically to host this data if the data is already hosted elsewhere.

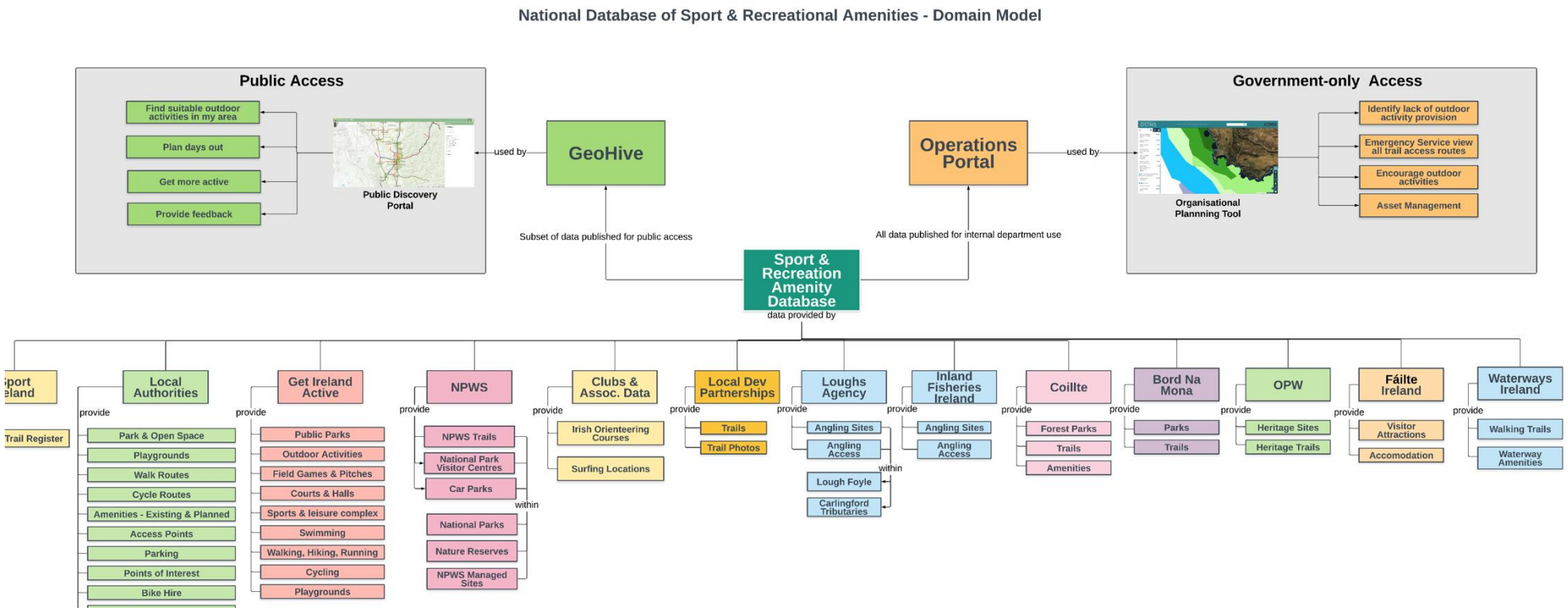


Figure 25: Domain Model for Sport & Recreational Amenity Database

6.2.1. Proposed Conceptual Data Model

The next step was to create a conceptual model that divided the database into separate and distinct classes of data. This is something that was actually created very early in the project to help nail down the scope, and it was continually refined during the consultation process. The current conceptual model is illustrated in Figure 26 and each of the conceptual classes are described below.

Conceptual Class	Description	Types	Example
Public Places	"Public place" means any place to which the public or a substantial group of the public has access and, in this context, constitutes places in which sport and recreational activities can be carried out or on which recreational facilities are located.	Beaches, forest parks, tourist attractions, nature reserves, play parks, playgrounds, lakes, rivers, heritage sites.	
Recreational Facilities	An installation, building or construction in a public place where recreational activities are carried out.	Cycle paths, angling sites, sports pitches, leisure centres, orienteering courses, surfing locations	
Amenities	Elements at a public place or recreational facility that improve the comfort and convenience of the site	Parking, picnic spots, toilets, bike hire locations, outdoor exercise equipment	
Trails	A marked or established path or route especially through a forest or mountainous region	Sport Ireland Trails Register, Greenways, Trail access points, Blueways	

Figure 26: Conceptual Data Model for the Sport & Recreational Amenity Database

6.2.2. Proposed Logical Data Model

The next step was to break down the conceptual data model into a logical data model for each class. The Public Places logical model is shown in Figure 27. The attributes were based on data providers' existing data holdings and on data currently supplied by local authorities in this arena to data.gov.ie

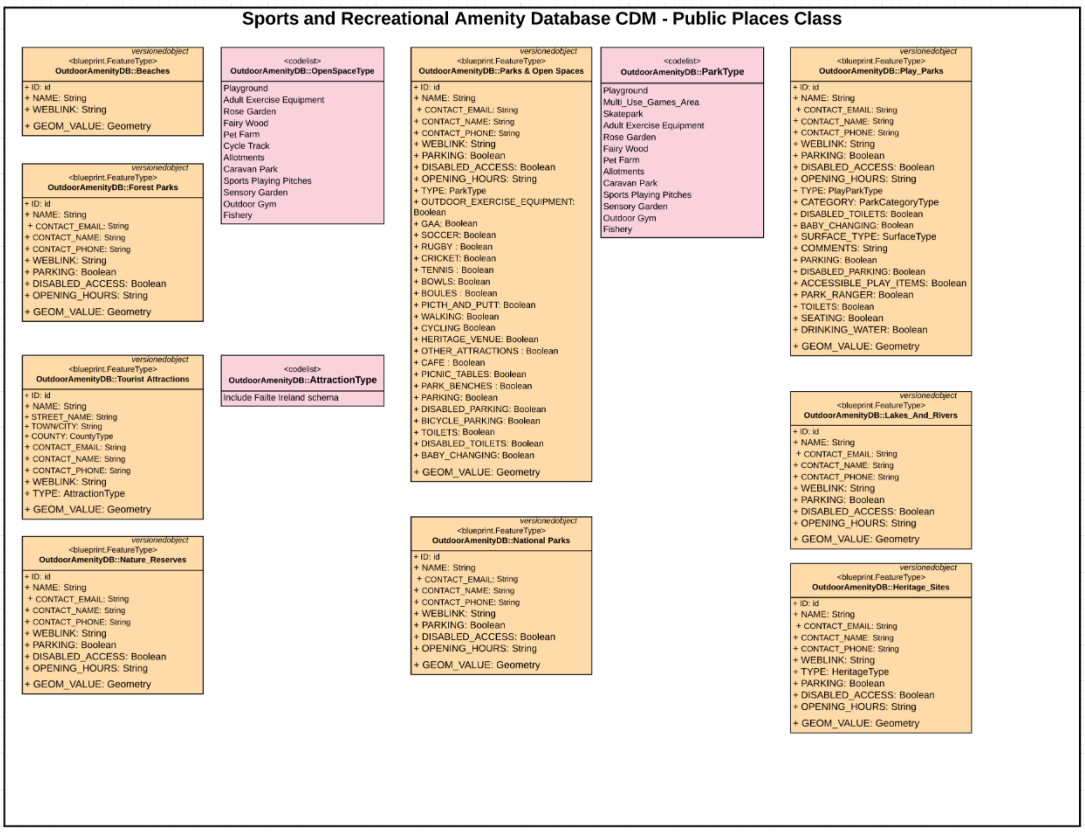


Figure 27: Public Places Logical Data Model

The next logical model is the Trails class and it is illustrated in Figure 28. This is one that should be focussed on from phase one as it will provide considerable benefits and will be in itself a challenging task to collate and combine all the existing data holdings into one consolidated source. Some additional relationships built into this logical model include the ability to report issues and feedback about trails, record inspections on the trails and store photographs about any of these data elements.

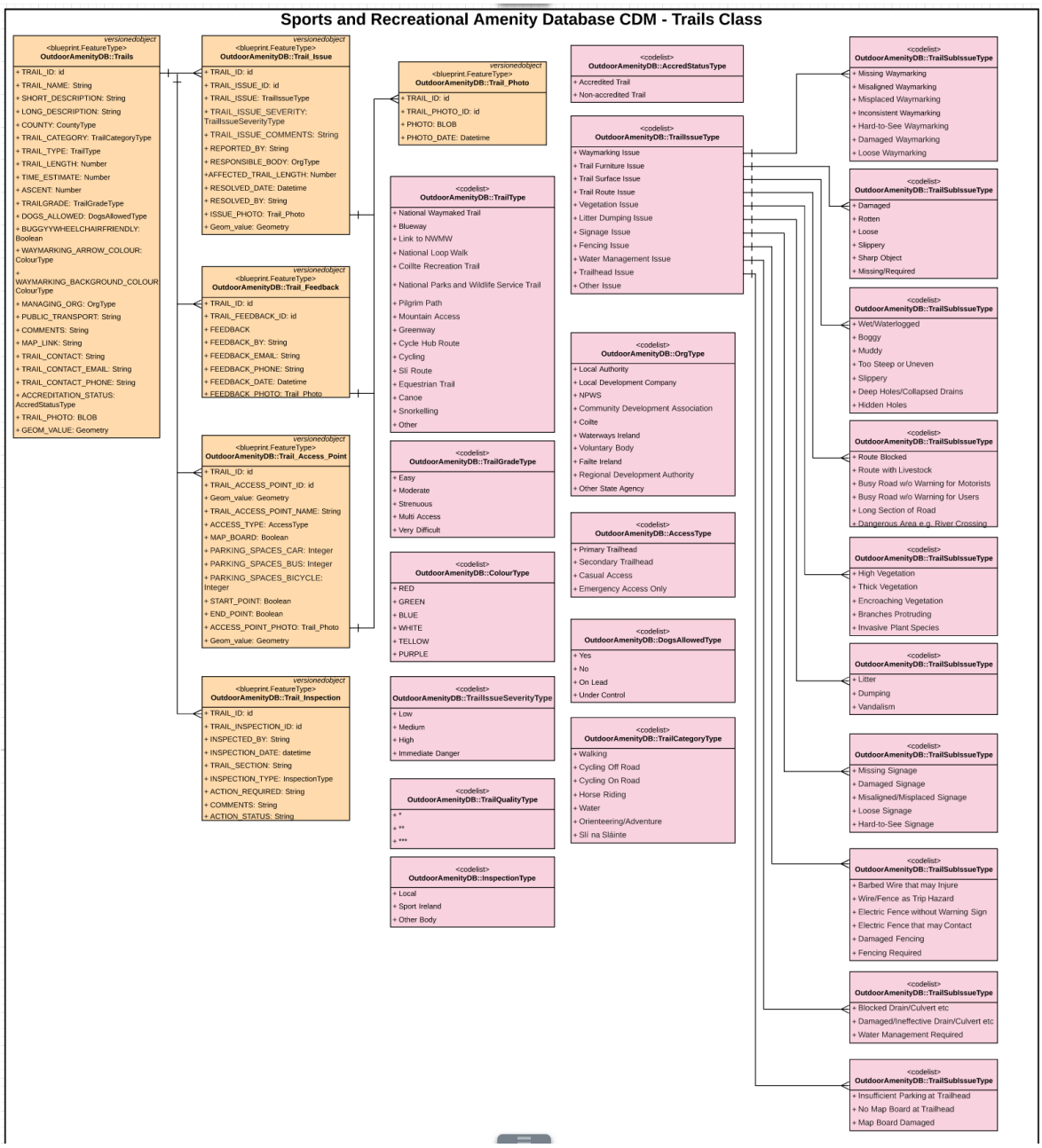


Figure 28: Trails Logical Data Model

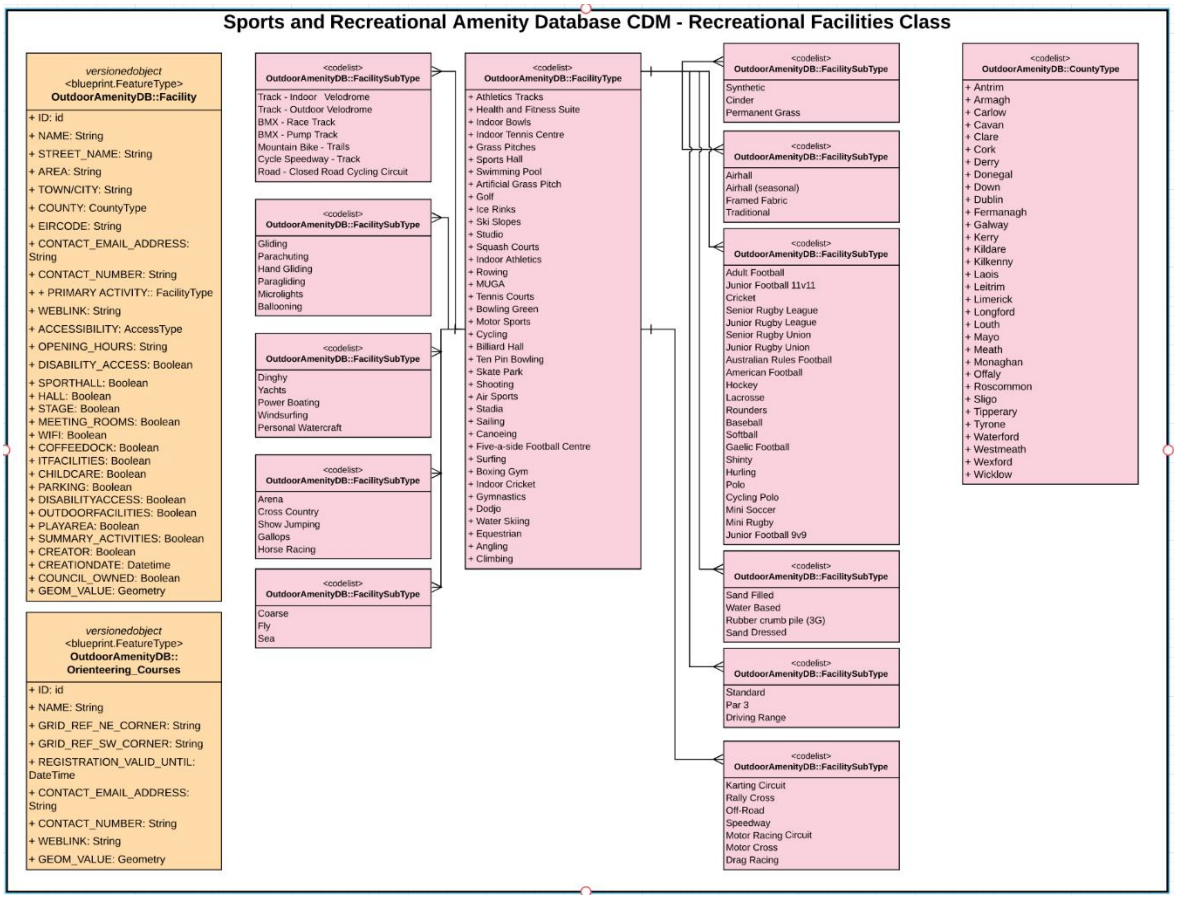


Figure 29: Recreational Facilities Logical Data Model

The recreational facilities and amenities logical data models are illustrated in Figure 29 and Figure 30 respectively. The attributes were based on data providers' existing data holdings and on data currently supplied by local authorities in this arena to data.gov.ie.

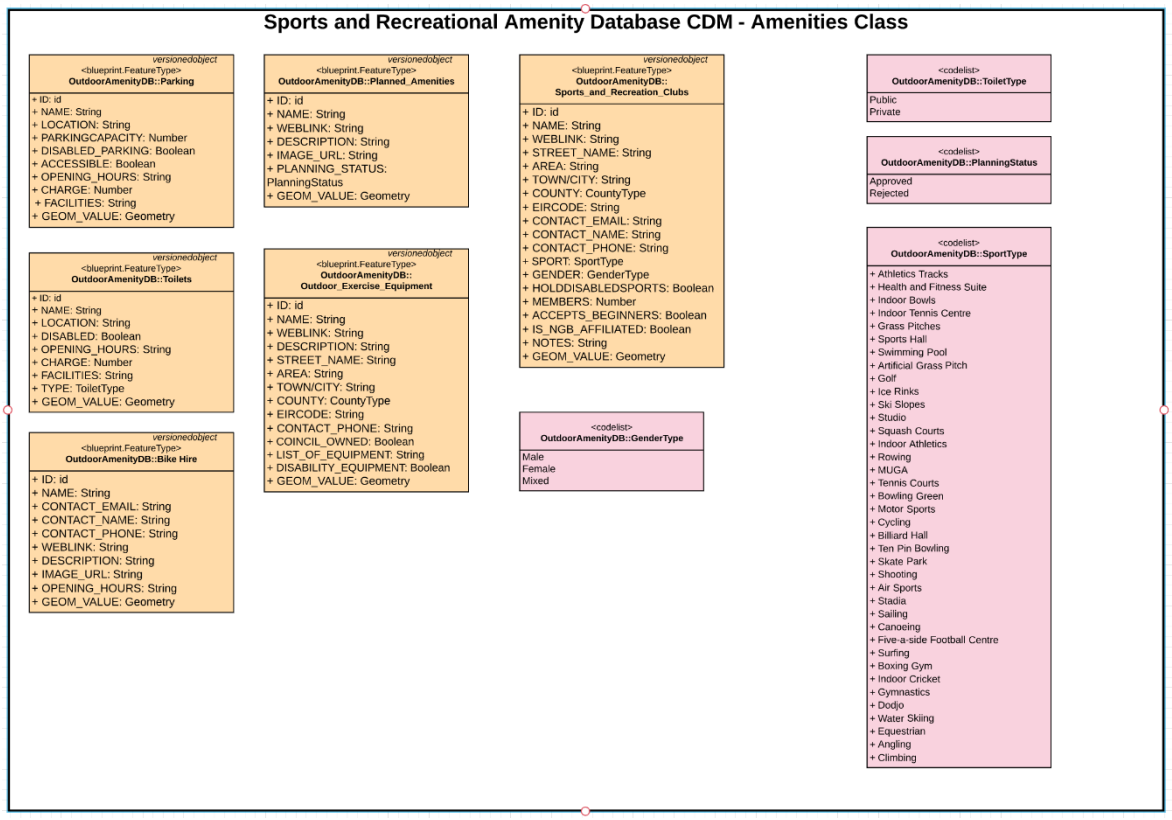


Figure 30: Amenities Logical Data Model

6.2.3. Data Management

This section will outline the options for data management of the Sports and Recreational amenity database. Two options will be outlined and a recommendation made based on feedback from consultees.

6.2.3.1. Data management process option 1

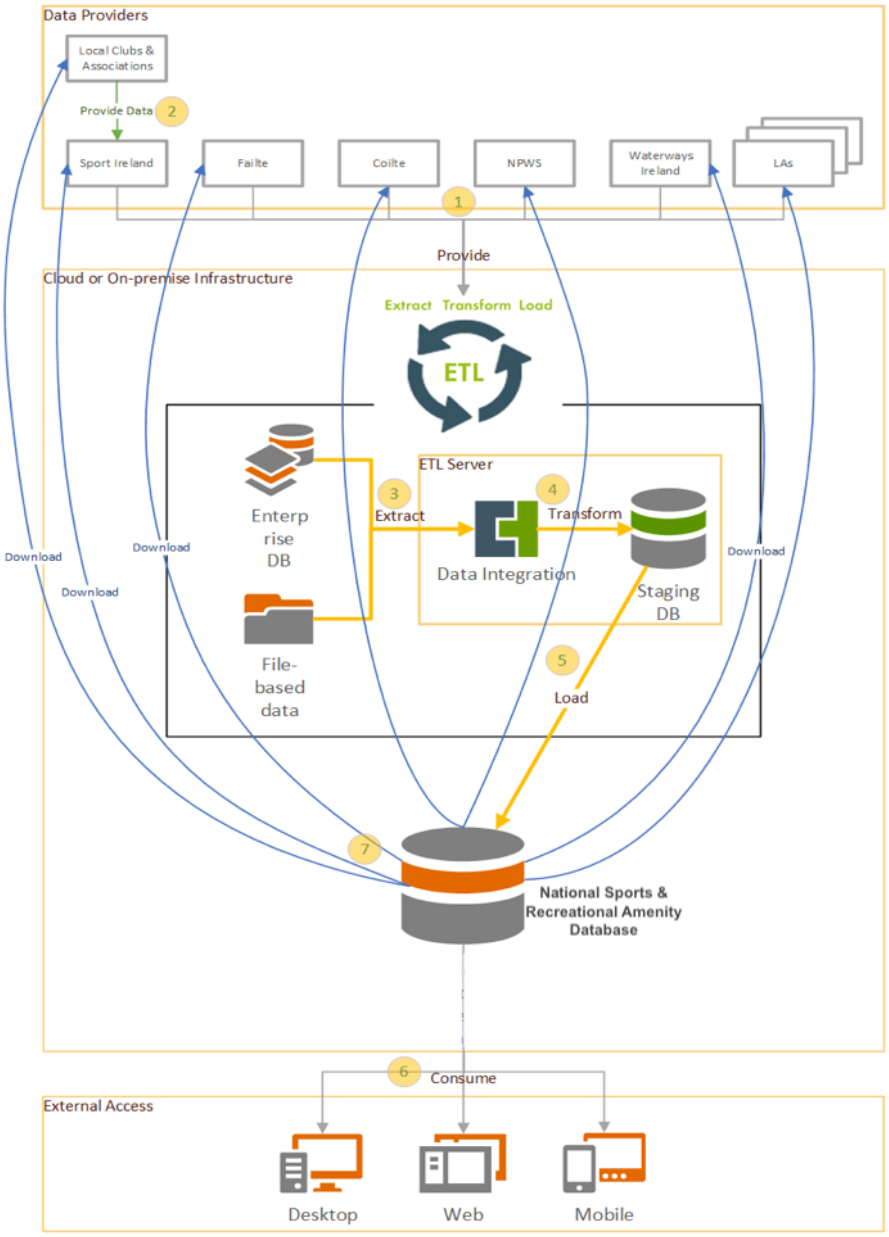


Figure 31: Data management process option 1

Figure 31 illustrates the workflow of how the data from different data providers gets into the main database.

1 This process requires data to be prepared by data providers before it goes through the ETL (Extract-Transform-Load) process into a format of a predefined schema. The data can be in Enterprise Geodatabase or in a file-based format.

2 Some data providers willing to input their data into the National Base Registry, but do not have accessible infrastructure in place to extract data from. In this case, the data can be sent to Sport Ireland in an appropriate format and Sport Ireland can provide that data on their behalf.

3 Once the data is extracted from the source into ETL server, data integration process kicks in.

4 In the data integration process the source data is transformed into target schema with correct projections and standardised domain values and stored into Staging database.

5 After successful transformation of the source data into target database schema, the loading of the data from staging database into the National Sport & Recreational Amenities database takes place.

6 From National Sports & Recreational Amenities database, the data becomes available for consumption by external clients such as public viewer through web services.

7 Data providers and stakeholders can download the data from the National Sport & Recreational Amenities database.

Pros	Cons
Less work for data providers	Adds additional ETL server with staging database
Minimal changes for data providers in their current process	Data validation carried out by Sport Ireland or another managing organisation
Automated process of data extract from the source and load into the National Sports & Recreational Amenities database	Data issues need Sport Ireland and data providers to resolve
	Greater lead time in identifying and resolving data issues
	3rd Party software for data integration is required such as FME
	Data providers required to have accessible infrastructure in order for ETL process to extract the data.

6.2.3.2. Data management process option 2

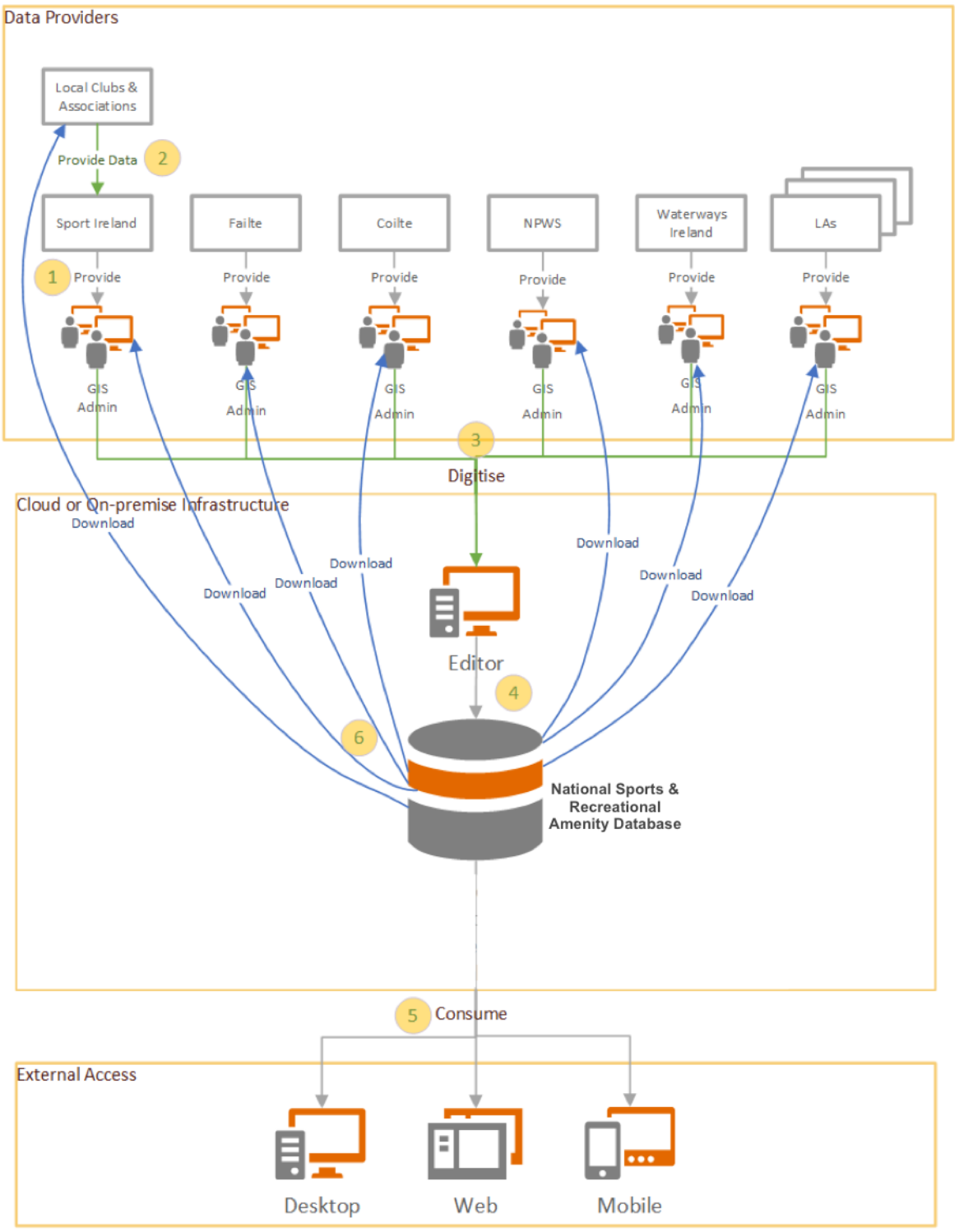


Figure 32 Data management process option 2

Figure 32 illustrates another process of the data flow from data providers into the main National Sport & Recreational Amenities database through a common editor that is directly connected with the target database.

1 This process requires each data provider to manage and validate the data prior to loading it into the target database by a dedicated GIS admin. The prepared data must meet the criteria in terms of projections, currency and standards.

2 Some data providers willing to input their data into the National Database, but do not have accessible infrastructure or resource in place to prepare the data. In this case, the data can be sent to Sport Ireland in an appropriate format and Sport Ireland can provide that data on their behalf.

3 Once the data is validated, a GIS Admin can digitise new assets or update existing assets using an Editor application provided. GIS Admins should have appropriate permissions on datasets they are inputting their updates.

4 Once the work is saved, the data is updated directly in the target database.

5 From National Sport & Recreational Amenities database, the data becomes available for consumption by external clients such as public viewer through web services.

6 Data providers and stakeholders can download the data from the National Sport & Recreational Amenities database.

Pros	Cons
Data validation carried out by data providers	More work for data providers (data validation, asset management)
Data issues resolved by data providers	No additional staging database required, i.e. no data validation step before the data is gone to the target database
Less work for Data Management team	
Shorter lead time in identifying and resolving data issues	
Data providers can maintain their own data repository or use centralised database entirely	
No additional ETL server	

The recommendation for this feasibility study would be option 2 mainly because any data issues are resolved at source and it removes a data transformation step that has proved troublesome on other similar projects.

6.3. Functional Requirements

This section will collate and transform the recommendations and feedback received during the consultation process into a set of functional requirements. The intention here is to specify the scope of a project to implement the database of Sports and Recreational amenities so that the implementation of this database, if it proceeds, could use these requirements within the projects requirements documents.

First, we will illustrate and describe the elements of the system, then make a set of recommendations on the project implementation and finish this section with a set of high level requirements based on the system recommendations. The overall system architecture is summarised in Figure 33 below.

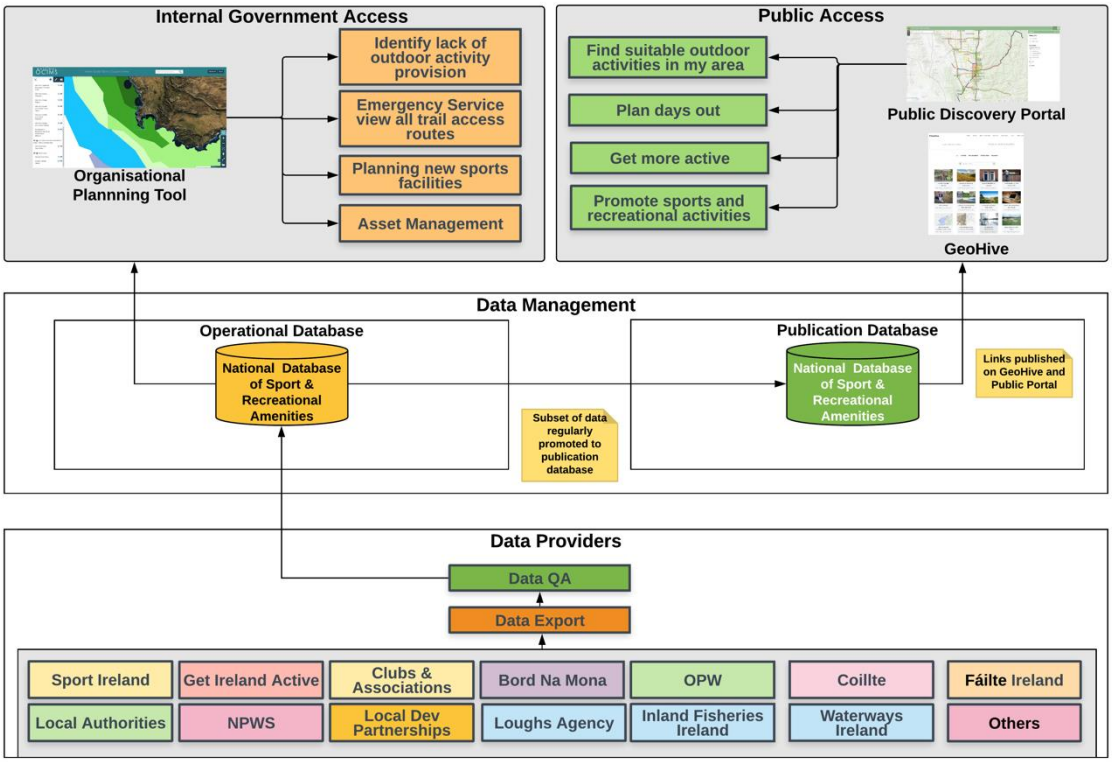


Figure 33: Overall System Architecture

The recommendations for system implementation are summarised below.

- The ***Sport & Recreational Amenity Publication database*** should be published as a publicly accessible version through GeoHive, specifically it would not be hosted in GeoHive but a link to the database would be provided to GeoHive. This would be a publicly available read-only version of the base registry. This link would also be made available for anyone to publish within their existing systems, portals or apps.
- The **Sport & *Recreational Amenity Operational database*** would be a version of the database that is published for operational purposes and would be read-write. Government agencies, local authorities and data providers would be able to edit and update spatial and non-spatial data held within this database. They would have the capability to view or download the data within it. A subset of this data would be published to the publication database at regular intervals.
- The ***hosting*** of the Sport & Recreational Amenity database would ideally be within its own dedicated cloud-hosted or on-premise environment and a link to the Publication database would be published on GeoHive. If cost, resources or time constrain this hosting then an alternate plan for Phase 1 of the project could be to host the database entirely within ArcGIS Online with a view to having a dedicated environment in a later phase.
- The Sport & Recreational Amenity Publication database should also be published to **data.gov.ie** (this would just be the non-spatial parts of the database as at time of writing data.gov did not hold spatial data).
- There would be a ***data supply process*** through which data providers can access the database and provide updates to it. Data providers with their own GIS would be able to

carry out a direct upload of data into the operational database or use their own GIS to make direct update to the database geometries and associated attributes.

- ***Data supply templates*** should be developed to give to data providers to allow them to populate these templates and carry out bulk uploads of their data
- Data providers would sign up to ***data supply agreements*** to commit to updating their relevant area of interest of the database on an agreed timescale, and resolve any data issues encountered
- A ***data supply specification*** would be developed to mandate minimum data capture standards for the data supplied.
- A ***data governance process*** should be implemented that provides a level of quality assurance of the data being imported into the database. This should have multiple levels as data provided by local authorities would require a different level of quality assurance to data (potentially) supplied by the public
- A ***portal*** should be created to provide web mapping interfaces for both public users to view data and operational users to view and update data.
- The spatial data should be made available as a set of open **web services** in the form of Web Mapping Services (WMS) that allow view only access and web feature services (WFS) that allow spatial query and update access. The data should also be available via Web Services in RESTful format.
- All of the data within the publication database should be made available to download in ***open formats***. As a minimum, it should allow download of non-spatial information in CSV, JSON, XML and RDF and spatial information as GEOJSON, GML, KML or Shapefile.
- ***Application Programming Interfaces*** (APIs) should be developed to allow application developers to access the data for use within web-sites and apps. It is this form of access that may be the best way to accept feedback from public users initially in the form of a TripAdvisor style, by adding feedback, for example, on walking trails.
- The project should be ***rolled out in phases***, with each phase having additional data and functionality. Phase 1 of the project implementation should focus on collating and maintaining the Trails class along with as many of the other data-sets within the conceptual model that are already available as open data within data.gov.ie. This provides an excellent and achievable starting point, after which lessons can be learnt and put in place for subsequent phases.
- An ***Asset Management workflow*** should be put in place on the operational database. This would allow inspections or issues to be recorded about trails and allow the responsible agency to see those issues and take remedial action if required. When this action is taken, the data would be updated to inform the person reporting the issue. It would be recommended that the data is put in place to support this functionality from Phase 1 but the workflow itself would most likely be implemented in a later phase as this would also involve additional functionality such as proactive alerting when an issue is recorded within the system.
- The spatial data within the database should be held in the ***Irish Transverse Mercator*** (ITM) projection system
- The data within the publication database should have descriptors about the datasets within it to help in the identification, location and retrieval of online resources by data-users. These descriptors are known as "***metadata***". Metadata is the summary information describing the data, including the availability, nature and constituents of the data. The metadata provides context about the data that helps users understand their meaning, such as:
    - What is the dataset called?
    - What is the subject matter?

- Where can I locate the dataset?
- When was it produced and last updated?
- From what sources was the information compiled?
- Are there any restrictions on their use?

The resultant high-level system requirements are listed below:

Reqt No	Reqt Type	Description
1	Functional	The system should implement the logical data model for the Sport & Recreational Amenity Database as a physical data model within the hosting environment so it can be populated and updated by the data management processes
2	Database	The database should be capable of holding and maintaining information including but not restricted to; • spatial data • non-spatial tabular data • documents • images
3	Functional	The system should provide a means for the data within the Sport & Recreational Amenity Database to be made available as a set of Web Mapping Services (WMS), Web Feature Services (WFS) and RESTful Web Services in a performant and open manner so that these services can be consumed within portals such as data.gov.ie
4	Functional	The system should publish a link to the public version of the database to GeoHive and make that data available as a RESTful Web Service, Web Mapping Service and Web Feature Service. As a note at time of writing GeoHive does not support WFS, but this is being considered for a planned architecture migration.
5	Functional	The system should publish a version of the database for operational purposes with the ab9lity for local authorities and central government agencies to view the spatial information and update the attributes on the trails data.
6	Functional	The web services published from the publication and operational database should be capable of being used directly within a Geographical Information System (GIS) to view, query and update (by users with the appropriate level of access) spatial information and attributes.
7	Data Management	The system should implement data management processes capable of receiving data to update subsets of the model on a regular basis.
8	Data Management	The system should create templates that can be supplied to data providers into which they will export their supplied data. This will

Reqt No	Reqt Type	Description
		ensure that data is provided in a consistent manner from all data providers. These templates will need to be capable of holding both spatial information, in the case of data such as trails, and non-spatial for updates to data such as clubs and societies information. There should be data templates for all aspects of the data model.
9	Data Management	The system should be able to support a Data Governance process for data supplied by data providers. This process should identify any issues with loading the spatial or non-spatial data into the database and allow any errors to be identified to data providers and resolved by them.
10	Data	The system should allow data providers to populate metadata for the data they supply. The exact fields to be populated on this metadata will need to be agreed but at a minimum they must include attributes relating to data quality, accuracy and efficacy of the data provided. This metadata must be compliant with DCAT-AP, the international Open Data metadata standard.
11	Functional	The system should provide an update mechanism from the operational database (hosted either on the cloud or on-premises) to the publication database (published to GeoHive by providing a weblink).
12	Data	The system would develop and agree minimum standards for data capture with data providers.
13	Functional	The system would provide an on-line mechanism for data providers to sign up and commit to supply data on a regular basis.
14	Functional	The system would involve the development of a portal to allow data providers secure access to view, query and update the publication database via interactive web map viewers.
15	Functional	The system would involve the development of a portal to allow public users with free access to query the publication database
16	Functional	The system would provide a flexible security model capable of creating users with a range of access to the data and the ability to have read-only access or read-write access to geometry and attribute information on all or a subset of tables within the model.
17	Functional	The system would support workflows allowing appropriate users access to update attributes or geometry on data within the model. This capability would support a variety of workflows but one of those would be an asset management that would allow users to report issues on trails, those issues to be flagged with the appropriate user and the issue to be updated once it has been rectified by the responsible agency.
18	Functional	The system should allow reports to be generated on any aspect of the data within the model such as the number of incidents reported on a trail or within an area of interest.

Reqt No	Reqt Type	Description
19	Functional	The public web mapping interface should allow for the following functionality: • Map navigation • Gazetteer • Spatial query, for example allowing the user to select features using attribute or spatial searches and export those selected features to an appropriate output type such as a spreadsheet • The use of a variety of basemaps such as OSi MapGenie or OpenStreetMap • Filtering of geometry by a specific attribute or set of attributes
20	Functional	The system should include a flexible mobile interface to allow the public to access the trails information on a mobile device. This should include the uploading of photos taken on-site referring to issues or general feedback, and it should be possible to download the trails data to a mobile device for use when walking the trail without internet connectivity.
21	Functional	The system should allow field workers to extract a selection of data from the Trails class for off-line editing in the field. These updates will be to attributes and spatial data in the field and will need to be imported as a separate 'red-line' layer for QA before applying those updates to the operational database as part of the data governance process.
22	Functional	The system should be capable of allowing users with suitable levels of access to upload GPS-enabled photographs taken in the field and associate them with particular places along a trail.
23	Functional	The system should support the ability for public users to upload GPS tracks (in GPX or KML format). These tracks would be imported as a separate 'red-line' layer for QA before considering applying those updates to the operational database as part of the data governance process.
24	Functional	The system should provide a capability for system administration of the operational database so that users can be created, updated appropriate levels of access to the data or services granted.
25	Functional	The system should include the provision of a guide for developers on how to access and use the API's and services within their applications.
26	Functional	The system must ensure that any user interfaces are developed in collaboration with the project team and designed in a manner that is user-friendly, provides an excellent user experience and is in line with the corporate branding designed for this initiative.

Reqt No	Reqt Type	Description
27	Non-functional	The project should develop a marketing plan and communication strategy for this Sport & Recreational amenity database to ensure it is well publicised and has its own brand identity.
28	Non-functional	The system should be designed in a manner that is resilient to failure.
29	Non-functional	The system should have some level of audit and event logging.
30	Non-functional	The aspects of the solution that use web browsers should ensure they are tested and support Internet Explorer version 11 and all future releases as well as Chrome version 73 and all future releases, Firefox version 66 and all future releases and Safari version 12 and all future releases
31	Non-functional	The system MUST provide a mechanism for role-based security. User roles should be flexible and assigned to users to allow for operations such as creating specific types of assets, carrying out specific inspections and creating follow-on actions.
32	Non-functional	The system should maintain security, protecting the integrity of Sport Ireland and all their data provider's systems and data and preventing any unauthorised access.

6.4. Organisational Requirements

This section will look at the organisational requirements of the system and the roles and data governance structures that would be recommended.

6.4.1. Roles and Resources

The roles recommended within the project implementation would be as follows.

6.4.1.1. Project Manager

Responsible for the overall running of the project, coordination of any external contractors, liaison with Ordnance Survey Ireland and the development of initiatives such as the overall marketing plan. The project manager should also put a project board or steering group in place with an appropriate subset of personnel from data providers and stakeholders. The project manager should also be responsible for the overall budget and for raising and managing any exceptions required to the project costs. One of the first activities for the project manager would be the development of a high-level plan and a clear definition of the phases of the project.

6.4.1.2. Data Manager

The Data Manager would be responsible for the day to day running of the project and the resultant system. They would be the main point of contact for each of the data providers and would manage

any issues with data provision. In the early stages, the data manager's main responsibility would be to sign up data providers, put data supply agreements in place and refine the specification of supplied data. The Data Manager would also lead on implementing the database design itself and lead on any data model changes required during the implementation. The Data Manager would also have a direct link to any external suppliers brought in to implement the overall project. The Data Manager would manage the development of the data governance and QA process and be responsible for the overall quality and integrity of the database. The Data Manager would liaise with Ordnance Survey Ireland and data.gov.ie to manage the provision of the database into these portals.

6.4.1.3. Lead Consultant

The Lead Consultant would be responsible for the technical development and support of the overall solution. They would liaise with the technical staff in each data provider organisation to assist directly with any issues in data supply. The Lead Consultant would also be responsible for the support of the portal and map viewers developed to publish and update the data. The Lead Consultant would work closely with any external stakeholders or IT companies to whom some or all of the project implementation is sub-contracted. The Lead Consultant would promote the use of the web services and APIs developed for the project implementation to ensure they are used and well supported.

6.4.2. Data Governance

There are three levels of data governance recommended to provide an appropriate level of Quality Control (QC) within this implementation. These are listed below.

6.4.2.1. Data Provider – QC Level 1

This level of QC would be for data providers who are mature and proficient GIS users. Their updates to the database would typically be via bulk uploads into a spatial data template and using data management option 2 they would resolve any issues with this upload at source. These updates would be directly applied to the database and have a follow-up QC check by the Lead Consultant and Data Manager to ensure they have been applied correctly. Some database queries would be created to validate these bulk uploads such as checking version dates on the spatial data have been updated correctly, checking for blank attributes and validating that geometry topology and consistency has not been compromised.

6.4.2.2. Data Provider – QC Level 2

This level of QC would be aimed at data providers without a GIS or who are less mature GIS users. This category of data provider will generally need more support, at least in the initial stages of the system roll-out. In this level of QC, the data provider updates would go to an intermediate spatial layer for more stringent QC and checking by the Lead Consultant. If these updates pass QC then they can be signed off by the Data Manager and applied by the Lead Consultant. As updates from a level 2 provider reach a good standard of QC, they could move to QC Level 1.

6.4.2.3. Public Access – QC Level 3

This form of QC may not be rolled out until after the phase 1 roll-out. In this workflow, feedback on amenities, updates to amenity geometry and the digitisation of new amenities could all potentially be received. In this model, those updates would be made into a separate 'red-line' spatial layer. There would be considerably more verification required to this layer, that may even involve a trail manager carrying out site visit to validate (or correct) the location of a new trail. If these updates pass QC they would also be signed off by the Data Manager and applied to the main database. Additional care would need to be taken in this case that these updates aren't overwritten in a data providers update, so they would also need to be applied to the data within a data provider's own database for that area of interest. It would also be recommended that an attribute be added to data supplied by the public to clearly state it was publicly provided. This option also presents opportunities to integrate with existing suppliers such as Strava.

6.5. Communication Requirements

One of the key aspects to the uptake and use of the Recreational Amenity database will be a communication strategy to raise awareness on the initiative itself and the variety of ways in which the data will be made available. This communication strategy needs to be multi-channel to factor in TV, radio, print and social-media to ensure it reaches as many people within the target audience as possible. For example, one of the target areas for the strategy will be GP practices to use the information as part of their social prescribing. This strategy will also factor in the developer community to ensure the data is used within new apps for the public to use and enjoy recreational amenities.

The breakdown of this strategy will be as follows (the costs are budgetary and were based on consultation with PR and Marketing professionals)…

- Branding, logo and web development (€30k)
- Advertising agency for newspaper and radio campaigns (€50k)
- Social media campaigns (€20k)
- TV (€50k)
- Continued maintenance in parallel with project implementation (€50k)

7. Assessment of Feasibility

This section will aim to comment on the feasibility of implementing the requirements as specified in the previous section. It will do this by addressing the question of feasibility using a range of assessment parameters.

7.1. Assessment Parameters

The parameters we will use to assess the feasibility of this initiative are as per the following table.

Area of Focus	Feasibility Study Asks…	Sample outcomes of interest
Acceptability	To what extent is a new idea, program, process or measure judged as suitable, satisfying, or attractive to program deliverers? To program recipients?	Satisfaction Intent to continue use Perceived appropriateness Fit within organizational culture Perceived positive or negative effects on organization
Demand	To what extent is a new idea, program, process, or measure likely to be used (i.e., how much demand is likely to exist?)	Actual use Expressed interest or intention to use Perceived demand
Implementation	To what extent can a new idea, program, process, or measure be successfully delivered to intended participants in some defined, but not fully controlled, context?	Degree of execution Success or failure of execution Amount, type of resources needed to implement Factors affecting implementation ease or difficulty
Practicality	To what extent can an idea, program, process, or measure be carried out with intended participants using existing means, resources, and circumstances and without outside intervention?	Efficiency, speed, or quality of implementation Positive/negative effects on target participants Ability of participants to carry out intervention activities Cost analysis
Adaption	To what extent does an existing idea, program, process, or measure perform when changes are made for a new format or	Degree to which similar outcomes are obtained in new format Process outcomes comparison between intervention use in two populations

Area of Focus	Feasibility Study Asks…	Sample outcomes of interest
	with a different population?	
Integration	To what extent can a new idea, program, process, or measure be integrated within an existing system?	Perceived fit with infrastructure Perceived sustainability Costs to organization and policy bodies Fit with organizational goals and culture Positive or negative effects on organization
Benefits	How will this new initiative benefit the users, the stakeholders, the public and life in general.	Benefits to users Benefits to the public
Cost	How much will the initiative cost?	Cost Breakdown

7.2. Feasibility Assessment

The assessment of this initiative based on the parameters listed in the previous section are below.

Area of Focus	Feasibility Study Asks…	Outcomes for Sport & Recreational Amenity Database
Acceptability	To what extent is a new idea, program, process or measure judged as suitable, satisfying, or attractive to program deliverers? To program recipients?	• Central to the organisational culture of Sports Ireland • Consultees throughout this engagement were extremely positive on this initiative – they saw a need for it and were willing to support it • This initiative is directly aligned with at least 13 national policies. These policies are listed in section 0 of this document
Demand	To what extent is a new idea, program, process, or measure likely to be used (i.e., how much demand is likely to exist?)	• National Sport Policy (action 18) mandates a national audit of sports facilities and the creation of a fully-accessible, comprehensive and up-to-date national database of sports facilities which will also be translated into a web-based portal to serve the needs of the public. • Already a large demand for amenity information and an active user community wants more accurate and coordinated information • Also, a need to promote this information to people who do not currently engage in enough exercise or outdoor activities in

Area of Focus	Feasibility Study Asks…	Outcomes for Sport & Recreational Amenity Database
		general with huge potential savings within the Health Service • There is a fundamental need for a definitive source of amenity information for development planning, emergency planning and asset management purposes among others.
Implementation	To what extent can a new idea, program, process, or measure be successfully delivered to intended participants in some defined, but not fully controlled, context?	• One of the factors that substantially increase the implementation challenge is the need to collate data from a large number of data providers in a range of formats, quality and structure. Indeed, the commitment from data providers should be a dependency on this implementation. • The success or failure of this initiative is dependent on implementing it in achievable phases • It is recommended that Sport Ireland will require a project manager (part-time), a data manager (full-time) and a lead consultant (full-time). • The overall risk of project implementation would also be reduced by sub-contracting some or all of the work to an external supplier.
Practicality	To what extent can an idea, program, process, or measure be carried out with intended participants using existing means, resources, and circumstances and without outside intervention?	• Each Phase of the project should focus on making specific data assets available within the base registry. The prioritisation of these data assets should be based on a combination of value and complexity to collate and import. • The commitment of data providers to supply data to the base registry on a regular basis is fundamental to the overall success of the programme • Some of the software already exists within Sport Ireland for this project but more software would be required for the data management and governance processes and the development of the portal • Suggest that Phase 1 of this implementation could be carried out within 6-9 months

Area of Focus	Feasibility Study Asks…	Outcomes for Sport & Recreational Amenity Database
Adaption	To what extent does an existing idea, program, process, or measure perform when changes are made for a new format or with a different population?	• A full communications strategy and marketing campaign will be required to ensure the uptake and use of the data • Good Branding will be fundamental to the promotion of the amenity information • The promotion should also devote time to working with developers to use the data within apps as this will maximise the use and benefits of the data
Integration	To what extent can a new idea, program, process, or measure be integrated within an existing system?	• If the amenity data is published via open data and open data services then it can be readily integrated with existing GIS systems • Integrating the data within GeoHive and data.gov.ie will also maximise its use and adoption
Benefits	How will this new initiative benefit the users, the stakeholders, the public and life in general.	• Provision of definitive information on sport and recreational amenities and the potential use of the data by in social prescribing and by app developers has huge potential savings for the health service • Increased potential tourism revenue through better information being available, especially on related areas of interest nearby to existing amenities • Single source of sport and recreational assets provides opportunities for better planning through evidence-based policy making better use of existing resources and identifying current gaps in provision. • Shared data, Open data standards, Agreed schemas • High-quality, regularly updated geo-data • Map-based, visual, easy-to-interact with data • Appropriate datasets available to each body and to public • Satisfy national and international data policies • Sustainable data and framework, Improved efficiency • Branding of public portals can be neutral or specific to each organisation

Area of Focus	Feasibility Study Asks…	Outcomes for Sport & Recreational Amenity Database
		• Ease-of-Use by public: comprehensive, flexible, accurate data
Cost	How much will the initiative cost?	• The initiative would require 2 full-time and 1 part-time resource. • Additional software would also be required for the data management processes and web portal. • Costs for a pilot would be estimated at €80,000 plus the cost of GeoHive support (to be confirmed) • Costs for phase 1 would be estimated at €650,000. That is assuming 2 full-time resources and 2 part-time resources for 9 months and costs for software licensing required for the data management processes and web portal. The overall cost for the 3-year programme is estimated at **€2 million** • *These costs assume the hosting of the Sport & Recreational Amenity database would be within its own dedicated environment and a link to the Publication database would be published on GeoHive. If cost, resources or time constrain this then an alternate plan for both the pilot and Phase 1 of the project could be to host the database entirely within ArcGIS Online with a view to having a dedicated environment in a later phase.*

7.3. Financial Aspect

One of the key aspects to managing the cost of this work will be to start with a well-defined and achievable phase 1 and build on the project from there. It is recommended that Phase 1 should focus on consolidating trails information and as many data-sets from the other data classes as possible. In this way, multiple data assets can be progressed in parallel. The Data Manager would develop a quality gateway with quality criteria for each data-set within the operational database. When a data-set within the operational database has met the agreed quality criteria then it would be promoted to the publication database. In addition, Phase 1 would put the data management and governance processes in place and publishing the data to GeoHive (via a supplied link) and a web portal. With that in mind, the resources required to achieve this would be, at a minimum, 2 full-time and 2 part-time resources. Additional software would also be required for the data management processes and web portal. Cost estimates for phase 1 are listed below and they assume the worst case that resources are all contracted in, as these are for budgetary purposes.

In addition, one of the most important contributing factors to the overall success and uptake of the initiative is a communication strategy. Budgetary costs for the development and implementation of that strategy have also been included in the cost breakdowns below.

The estimated costs by phase of the implementation of a National Sport and Recreation base registry are as listed below. These are expanded upon in more detail in the table following. As these costs are for budgetary purposes, the worst-case scenario has been assumed, that is that all resources are contracted in and the daily rate assumed is €800 per day.

Table 1: Summary of costs by Phase

Phase	Duration	Cost
1	9 months	**€650,000**
2	6 months	**€330,000**
3	6 months	**€300,000**
4	6 months	**€280,000**
5	6 months	**€300,000**
6	3 months	**€140,000**
Total		**€2,000,000**

Table 2: Detailed Cost Breakdown by Phase

Phase	Duration	Resources required	Estimated Costs (€)
1	9 months	1 full-time Data Manager	€150,000
		1 full-time Lead Consultant	€150,000
		1 part-time Solution Architect (assumes 2 days/week)	€50,000
		1 part-time Project Manager (assumes 2 days/week)	€50,000
		Additional software required for data management and publication of operational database… - FME Server licence - 2 X FME Desktop licences - ArcGIS Online Organisation Account - 3 ArcGIS Pro desktop licences – estimate (assumes the database is cloud hosted and no hardware is required)	€50,000
		Additional costs for management of GeoHive services	€30,000
		Communication Strategy – Development and Implementation - Branding, logo and web development (€30k) - Advertising agency for newspaper and radio campaigns (€50k) - Social media campaigns (€20k) - TV (€50k)	€150,000
		Software Support and Maintenance and additional technical call-off days	€20,000

Phase	Duration	Resources required	Estimated Costs (€)
		Phase 1 Total	**€650,000**
2	6 months	1 full-time Data Manager	€100,000
		1 full-time Lead Consultant	€100,000
		1 part-time Project Manager (assumes 2 days/week)	€40,000
		Recurring costs for management of GeoHive services – estimate	€20,000
		Communication Strategy – Implementation & maintenance of multi-channel strategy	€50,000
		Software Support and Maintenance and additional technical call-off days	€20,000
		Phase 2 Total	**€330,000**
3	6 months	1 full-time Data Manager	€100,000
		1 full-time Lead Consultant	€100,000
		1 part-time Project Manager (assumes 2 days/week)	€40,000
		Recurring costs for management of GeoHive services – estimate	€20,000
		Other software recurring costs	€20,000
		Software Support and Maintenance and additional technical call-off days	€20,000
		Phase 3 Total	**€300,000**
4	6 months	1 full-time Data Manager	€100,000
		1 full-time Lead Consultant	€100,000
		1 part-time Project Manager (assumes 2 days/week)	€40,000
		Other software recurring costs	€20,000
		Software Support and Maintenance and additional technical call-off days	€20,000
		Phase 4 Total	**€280,000**
5	6 months	1 full-time Data Manager	€100,000
		1 full-time Lead Consultant	€100,000
		1 part-time Project Manager (assumes 2 days/week)	€40,000
		Recurring costs for management of GeoHive services – estimate	€20,000

Phase	Duration	Resources required	Estimated Costs (€)
		Other software recurring costs	€20,000
		Software Support and Maintenance and additional technical call-off days	€20,000
		Phase 5 Total	**€300,000**
6	3 months	1 full-time Data Manager	€50,000
		1 full-time Lead Consultant	€50,000
		1 part-time Project Manager (assumes 2 days/week)	€40,000
		Phase 6 Total	**€140,000**
Grand Total			**€2,000,000**

These costs assume the hosting of the Sport & Recreational Amenity database would be within its own dedicated environment and a link to the Publication database would be published on GeoHive. If cost, resources or time constrain this then an alternate plan for Phase 1 of the project could be to host the database entirely within ArcGIS Online with a view to having a dedicated environment in a later phase.

7.4. Pilot Phase

The aims of the pilot phase will be to maintain the momentum established during the consultation process, start building the portal and database and use the collateral developed to help build the business case and raise the funds necessary to begin at least phase 1 of the project. In this way, the initiative can progress seamlessly into project implementation. It is suggested that the work to be carried out would be as listed below…

The pilot phase would be comprised of the following high-level objectives…

- Collate as much available sports and recreational amenities as possible
- Create the pilot database and establish a pilot portal
- Build supporting collateral to demonstrate the pilot
- Publish the initial database link to GeoHive in liaison with the GeoHive team
- Use the collateral to establish and present the business case for this initiative
- Use the collateral to build a core working group from interested stakeholders and data providers
- Project manage working group meetings
- Prepare funding document/business case
- Present business case
- Refine/present budget
- Refine high level implementation plan
- Move the project forward to implementation

The roles required and costs for this pilot are estimated below and the duration is recommended to be limited to 6 months…

Role	Suggested Time Allocation	Estimated Cost
Spatial Data Manager	2 days/week for 6 months	**~€30,000**
GIS Architect	1 day/week for 6 months	**~€20,000**
Lead Consultant	2 days/week for 6 months	**~€30,000**
GeoHive support	GeoHive team to confirm	**tbc**
Total		**€80,000 + GeoHive support costs**

7.5. Potential Implementation Plan

A potential implementation plan is illustrated in Figure 34 below.

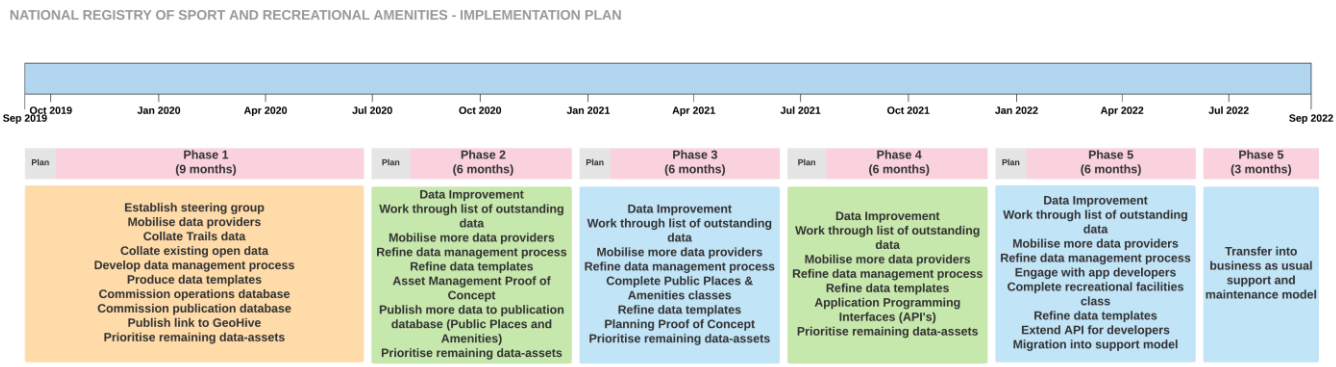


Figure 34: Potential Implementation Plan

In summary, each phase of the project would focus on the following…

Phase 1: This phase would establish a project steering group ideally made up of a subset of data providers and stakeholders. A pre-requisite for this stage would be a commitment from data providers to provide data on a regular basis into the base registry. Ideally each data provider would have a mandate to supply this data so the programme does not depend on the goodwill of individuals, but has a mandate that agencies need to provide data updates to the base registry. This phase will put the data management framework in place and aim to consolidate the trails data as well as a good range of data assets from the other classes within the base registry. Data templates for supply will be developed and the initial operations database and publications database will be made available and populated. The phase should end with the provision of a link to the publications database to GeoHive. The communications strategy should operate in parallel to phase 1, and all subsequent phases to ensure stakeholder buy-in and realisation of benefits.

Phase 2, 3, 4, 5: It is recommended that each subsequent phase will be of reasonably short duration such as 6 months as this ensures a focus and momentum of the overall programme. Each phase should start with a planning phase to identify new data assets to add to the base registry. In addition, each phase would identify and implement data improvements to data already within the base registry. A set of proof of concepts of use cases for the base registry would be refined and implemented within these phases, such as the development of an asset management workflow. It is recommended that these workflows by kept simple from the start and get built out into more sophisticated workflows in later stages. Each stage should close with a prioritisation of work for the next stage. When the base registry is populated and the data update mechanisms are functioning well, applications programming interfaces should be developed into the base registry so that app developers and system integrators can also utilise the registry in systems and apps they develop.

Phase 6: This would be a short phase to transfer from the development model of the project into a business as usual mode of operation. It would involve defining management and support mechanisms to ensure the system remained operational while also being able to evolve and respond to changes and updates as they were required.

7.6. Potential Constraints, Issues and Risks

Some potential issues, risks and constraints identified by consultees throughout the consultation process are listed below along with suggested mitigating factors.

Risk Issue Constraint	Description	Mitigating Factors
Issue	Data from various sources is not standardised.	Implement common schema for Trails and have it reviewed and ratified by the Local Authority Open Data Group For other data-sets, keep them to a core set of attributes that are common to all data providers
Risk	The maintenance of the data is a concern and a risk. There have been similar projects and some have failed as a result of data-providers not maintaining or updating the data	The feasibility of this project depends on data providers keeping their data updated. Ask data providers to commit to data supply agreements and ensure the supply process is as similar as possible to their existing open data supply processes to minimise the amount of additional work required from them. A mandate to data providers to provide their data on a regular basis should be a dependency on initiating this implementation.
Constraint	The key success factor for projects like this are to start small and expand, i.e. small schema first and then grow	Phase 1 recommended scope is to focus on trails and include other data-sets that already exist as open data

Risk Issue Constraint	Description	Mitigating Factors
Constraint	Different councils or departments will have different levels of funding for GIS so certain places will have more features mapped than others	Consolidating amenity information across Ireland will help with identifying gaps in coverage and addressing them
Issue	There could be bits of trails missing as don't have permission from land owners. Can't verify at the moment what data could be used.	Assess this issue more closely when the data is being collated, see what gaps exist and take action to fill the gaps
Issue	Trail information will be collected to a variety of data capture standards and accuracies across data providers. Would be good to have an authoritative geometry / agreed digitising standard for routes – OSi could define this. Good for routes that go through different counties and types of land.	Develop a data capture standard specification for Trails as part of the project implementation
Risk	Consistency of features such as trails that cross county boundaries	Definitely an issue, especially when geometries are captured to largely different accuracies. Analysis should be carried out as the data is collated on the quality across county boundaries and collaboration would be required with neighbouring local authorities to address issues.
Risk	Local gov working group and GIS user group – enthusiastic about sharing data but operational needs and staffing etc can prevent this.	Funding for this project will put the data management processes in place, but time and resources will still be required from local authority staff to keep data updated

8. Conclusions and Recommendations

The overall conclusion for this feasibility study is that this project is feasible with certain caveats. The recommendations and their associated actions are listed in this section.

Recommendation 1 **The benefits of this project outweigh the potential risks and estimated costs so overall the project is feasible. However, the key factor to success will be to limit the initial scope to an achievable target within 6-9 months. This initial phase should be followed by an Inspect and Adapt session that assesses the success of the delivery against target, makes the decision on whether to proceed with another phase and defines a clear and achievable target for that next phase.**	***Action 1*** This initiative should progress as quickly as possible to a pilot phase to establish an initial database and supporting portal. This platform could be used to communicate the benefits, build the business case, establish a working group and proceed to the implementation phase. ***Action 2*** The Conceptual Data Model for the Trails class should be implemented as a common data model for trails information in Ireland. ***Action 3*** The data model has been designed in an extensible manner so that it can support all sports and recreation amenities and club information ***Action 4*** Phase 1 should focus on collating the Trails data class with as many data assets from other classes that can be collated in parallel. In addition, a data supply and management process should be implemented in Phase 1. ***Action 5*** Other areas of the Sports & Recreational Amenity database that could be populated in Phase 1 are aspects of the model that already exist as Open Data from Local Authorities such as car parks, playgrounds and play parks as these should be relatively easy to locate and existing data update processes are in place for

	them. Data-sets outside of trails should have a very minimal set of attributes (such as name, web-site link and location/geometry) as this will minimize the amount of data transformation required by data providers as well as avoiding data redundancy by including data elements that not all local authorities maintain

Recommendation 2 **A clear commitment of data updates, time and resources is required from each data provider to the Sports & Recreational Amenity database.**	***Action 6*** Data Supply Agreements should be drawn up with data providers to gain commitment on the work required from them to keep agreed areas of the database up to date within pre-defined timescales which may be weekly, monthly, quarterly, annually or as needed

Recommendation 3 **Dedicated resources should be put in place by Sport Ireland for the implementation of this initiative as there will be substantial work required to coordinate the provision of data and the implementation of the system**	***Action 7*** Appoint a Data Manager dedicated to the coordination of data supply and management. The Data Manager would be responsible for the day to day running of the project and the resultant system. They would be the main point of contact for each of the data providers and would manage any issues with data provision. In the early stages, the data manager main responsibility would be to sign up data providers, put data supply agreements in place and refine the specification of supplied data. The Data Manager would also lead on implementing the database design itself and lead on any data model changes required during the implementation. The Data Manager would also have a direct link to any external suppliers brought in to implement the overall project. The Data manger would also manage the development of the data governance and QA process and be responsible for the overall quality and integrity of the database. The Data Manager would also liaise with Ordnance Survey Ireland and data.gov.ie to manage the provision of the database into these portals.

	Action 8 Appoint a Lead Consultant dedicated to the technical development and support of the overall solution. They would liaise with the technical staff in each data provider organisation to assist directly with any issues in data supply. The Lead Consultant would also be responsible for the support of the portal and map viewers developed to publish and update the data. The Lead Consultant would also work closely with any external stakeholders or IT companies to whom some or all of the project implementation is sub-contracted. The Lead Consultant would also promote the use of the web services and API's developed for the project implementation to ensure they are used and well supported.

Recommendation 4 **Substantial effort will be required to ensure that the quality of Trails information is consistent across the country especially in areas such as across county boundaries.**	***Action 9*** Implement a standard schema for Trails as specified in this document ***Action 10*** Present the Trails schema to the Local Authority Open data group and target getting this schema ratified and adopted by this group. This would greatly facilitate the update of the data by local authorities as well as any work to address inconsistencies across county boundaries by providing a mandate from this group to each local authority to update and publish Trails data.

Recommendation 5 **Data Management processes must be put in place to ensure the Sports & Recreational Amenity database is updated on a regular basis and any data issues are identified at source and resolved by the individual data owners before import into the database. The data management process should have 3 options for data supply:**	***Action 11*** Implement data management option 2 as specified in this document as in which data providers update the main National Sports & Recreational Amenities database through a common editor that is directly connected with the target database. In this way, data issues are resolved by the data owners and

- **Data providers with their own GIS may be able to perform a bulk upload from their own system directly into the target database** - **Data providers without their own GIS would be able to edit the target database directly via a web mapping interface** - **Data providers who do not supply spatial data would be able to provide data updates in the form of spreadsheets in pre-defined formats**	additional data transformation steps after data has been supplied are not required. ***Action 12*** The data management process created for data providers to populate should consider the fact that not all data providers will have a GIS, some will not provide spatial information at all, it will be in the form of spreadsheets and therefore standard templates are required for data provision. ***Action 13*** The Data manager will be responsible for the coordination and support of the data management processes from each data provider. ***Action 14*** Implement Quality Control processes appropriate to each data provider. For example, data from data providers such as local authorities would require a different level of QA than data supplied from the general public

Recommendation 6 **It is recommended that the 'ownership' of data within the data supply chain is clearly communicated**	***Action 15*** Clearly communicate the fact that the data itself will still be owned by the data providers and it will be their responsibility to provide the data on a regular basis and resolve any issues with that data. This should be included within the Data Supply Agreements. The Data Manager will be responsible for coordinating the supply of the data and the consolidation of that data into a central database.

Recommendation 7 **A link to the Sports & Recreational Amenity database should be published on the GeoHive portal for public access on a read-only basis.**	***Action 16*** Liaise with the Ordnance Survey Ireland GeoHive team to include the Sports & Recreational Amenity database as one of the data assets within GeoHive. Ideally this would have a new GeoHive content category for Sports & Recreation. ***Action 17*** Work with the OSi team to help promote the availability of new data assets after each phase.

Recommendation 8 **The Sports & Recreational Amenity database should be published in a cloud or on-premises basis for operational purposes such as Asset Management. This version of the database would only be provided to secured users and it should be possible for users to have read-only or read-write access to some or selected subsets of this database.**	***Action 18*** Confirm hosting arrangements for operational database. Cloud-based provisioning would be recommended as it will involve a shorter lead time and less up front cost. ***Action 19*** Implement the data aspects of the Asset Management workflow in Phase 1 of the project by implementing the Trails data model specified in this document but do not consider any Asset Management functional workflows until later phases of the project.

Recommendation 9 **Ensure the Sports & Recreational Amenity database is published in ways that maximise opportunities for users to discover and use it.**	***Action 20*** Publish the Sports & Recreational Amenities database as RESTful Web Services, as well as Web Map and Feature services (WMS and WFS) in Phase 1 of the project and supply a link to GeoHive ***Action 21*** Allow free download of the Trails data in open, raw formats such as CSV, XML,

	GEOJSON and KML so that the uses and benefits of the data can be maximised ***Action 22*** Ensure that metadata accompanies all data-sets published in Phase 1 of the project clearly specifying the quality, efficacy and accuracy of the data. ***Action 23*** Develop an Application Programming Interface (API) into the Sports & Recreational Amenities database so that it can be used by app developers to create new and innovative apps.

Recommendation 10 **Develop a Communications Strategy and a PR and marketing campaign for the publication of the national Sports & Recreational Amenity information to run in parallel with each phase of the project implementation**	***Action 24*** Develop a brand identity and marketing materials for specific areas of the database such as the Trails database for Ireland ***Action 25*** Hold information sessions with appropriate groups such as app developers to encourage uptake, collaboration and use of the data

Recommendation 11 **Continually look for opportunities to innovate and update and share the Sports & Recreational Amenity database in new ways**	***Action 26*** Engage with Department of Health to identify innovative ways the data could be used in Social Prescribing, and how it could be most effectively promoted and adopted by primary healthcare professionals, for example potential integration with existing GP systems. ***Action 27***

	Engage with private sector organisations who may wish to publish or provide updates to the data such as Google and Strava ***Action 28*** Crowd-sourcing information from the public would substantially increase its use and relevance. This could be rolled out in phases, i.e. not at all in phase 1, textual feedback and comments in phase 2 and perhaps GPS tracks for trails in phase 3.

Recommendation 12 **The implementation of the Sports & Recreational amenity database should be firmly aligned with each of the principles of the Public Services Data Strategy (2019-2023) that sets out the context for any development of authoritative, national datasets.**	***Action 29*** The project implementation should be aligned with the principles outlined in the Public Services Data Strategy as described below… **Principle 1: Data is discoverable by citizens, businesses and the Public Service** – *achieved via GeoHive and a dedicated portal for internal local and central government use* P**rinciple 2: Data is processed in a transparent manner** – *How the data is produced and managed must be clearly communicated to ensure the* Sports & Recreational *data is trusted* **Principle 3: Data that can be made public should be made public** – *encouraging each stakeholder to share the sports and recreational amenity data they have* **Principle 4: Data is reusable** – *The* Sports & Recreational *amenity data is published for general public access, in open ways for apps to be created using it and for government for focussed uses such as asset management and emergency response* **Principle 5: Data is accessed and maintained via base registries** – *one central* Sports & Recreational *amenity database should be created that provides a link to GeoHive for public access*

	Principle 6: Data is accessible through APIs to support interoperability – *a set of Application Programming Interfaces should be developed after Phase 1 of the database implementation* **Principle 7: Data is demonstrably processed in line with legislation** – *specifically it is important to align with the Data Sharing and Governance Act* **Principle 8: Data is effectively governed** – *data management processes implemented from Phase 1 with data ownership remaining with the data providers* **Principle 9: Data is collected and processed digitally** – *the resulting initiative should have an over-riding strategy of digital first for data collection and updating* **Principle 10: Data is used to support evidence- based decision making** – *the internally published version of the* Sports & Recreational *amenity database will be used for a variety of prioritised use cases such as asset management and emergency response.* **Principle 11: Data is processed in a secure and private manner -** *the resulting initiative should adhere to Public Sector ICT security policies*

Appendix A: Workshop Attendees

Organisation	Person	Role
Bord na Mona	David Reilly	GIS Specialist
Bord Na Mona	Pat Ring	Head of Land & Property
Clare Local Development Company	Eoin Hogan	RRO
County Wicklow Partnership	Bryan Fennell	RRO
Department of Culture, Heritage and the Gaeltacht	Gareth John	GIS Manager
Department of Culture, Heritage and the Gaeltacht	Sarah Shiel	AP, Built Heritage
Department of Transport, Tourism & Sport	James Lavelle	Sports Policy
Department of Transport, Tourism & Sport	Donal Hannigan	Sports Capital Programmes
Dept of Rural & Community Affairs	Finola Moylette	Rural Programmes
Dublin City Council	Liam O'Loughnan	GIS Coordinator
ESRI Ireland	John Hewitt	GIS Consultant
Esri Ireland	Tatiana Ten	Senior Consultant
Esri Ireland	Rachel Abernethy	GIS Analyst
Failte Ireland	Orla Woods	Activities Team
Failte Ireland	Alice Coleman	ICT
Failte Ireland	Philip Keogh	ICT
Fingal County Council	Dominic Byrne	Head of I.T.
Galway County Council	Barry Doyle	Data Manager
Healthy Ireland	Greg Straton	Health and Wellbeing Programme
Healthy Ireland	Fiona Mansergh	Assistant Principal, Health and Wellbeing Programme
HSE	Colm Casey	PAC
Inland Fisheries Ireland	Kieran Rocks	GIS Officer
Irish Orienteering Association	John McCullough	Vice Chair

Organisation	Person	Role
Longford Co Co	Donall Mac An Bheatha	Senior Planner
Longford County Council	Sylvia Smith	GIS Technician
NPWS	Michelle Molumby	GIS Specialist
OPW	Richard McDonnell	GIS Officer
OSi	Lauren Lucas	GIS Specialist
OSi	Dominic Cronin	Service & Supply
Smart Dublin	Nicola Graham	Open Data Coordinator
South Dublin County Council	Laurence Colleran	Senior Executive Parks Superintendent
South Dublin County Council	D McCormack	Executive Engineer
South Kerry Partnership	Paddy Casey	RRO
Sport Ireland	Una May	Director of Participation and Ethics
Sport Ireland	Darragh O'Sullivan	Project Lead
Sport Ireland	Doug Corrie	Project Manager
Sport Ireland	Cormac MacDonnell	Manager
Swim Ireland	Carol Finlay	Participation Officer
Waterford County Council	Jon Hawkins	GIS Project Lead
Waterways Ireland	Adrian O'Reilly	GIS Administrator

Appendix B: Data Inventory

Item	Data-set	Data Owner/ Provider	Update frequency	Additional comments
1	Play pitches, Disabled parking spaces, leisure facilities, heritage venues, beaches, Tourist information points, parks, play areas	Fingal County Council	Irregular	All currently published on https://data.gov.ie/
2	National Parks, Trails around national parks and nature reserves	NPWS	Tbc	There isn't a current mapping initiative to ensure data standards but there is an ambition to get something piloted this summer and would be good to plug that in to this project.
3	Blueways, Activities on Water	Waterways Ireland	Tbc	http://www.bluewaysireland.org/activities
4	No data currently available but willing to participate when it is	Longford County Council	Tbc	
5	Playing pitches, Sports and Recreation Clubs, accessible parking, health and well-being, pavilions, outdoor exercise equipment, heritage walk stops, leisure centres, hiking trails and fitwalk circuits, swimming pools, playgrounds, parks and open spaces	South Dublin County Council	Irregular	All currently published on https://data.gov.ie/
6	Trails GIS data – currently being re-digitised based on OSi prime 2	Sport Ireland	Quarterly or Annually	Sport Ireland has managed a register of recreational trails in Ireland over the past 10 years, which represents an official listing of all developed recreational trails in Ireland. Sport Ireland uses the ArcGIS system to manage this register and shares this data with other Government organisations through the Data.gov.ie website https://data.gov.ie/dataset/sport-ireland-trails

Item	Data-set	Data Owner/ Provider	Update frequency	Additional comments
				The trails register is available to the public on the web platform www.irishtrails.ie
7	Route of the Waterford Greenway and associated facilities around that e.g. cycle hire and amenities.	Waterford County Council	Annually	Currently developing a layer of trails.
8	Prime 2 base-mapping	Ordnance Survey Ireland	Quarterly	MapGenie WMS web service
9	License the use of their land bank to community groups and this is gathered in ArcMap.	Bord Na Mona	Annually	Before any of this could be passed on then the other organisations would have to check if this fits in with their licensing – legal aspects to publicly available data.
10	Beaches	EPA	Annually	https://www.beaches.ie/find-a-beach/#/beach/IEEABWC020_0000_0400
11	Swimming places	Swim Ireland	Annually	Data is in the spreadsheets RNLI would have a good idea for outdoor water areas
12	Walk Dublin Wayfinding Points, Dublin Bikes, Playing Pitches	Dublin City Council	Irregular	All currently published on https://data.gov.ie/
13	Get Ireland Active – Active Places data	Get Ireland Active	Annually	Data is in spreadsheets. look on the website, http://www.getirelandactive.ie/, Facilities
14	Orienteering courses (grid references for existing permanent courses), information on events	Orienteering Ireland	tbc	Excel spredsheets. rolling calendar of competitions around the country Maps of Permanent Courses
15	Trails, Conditions, counters to know number of people on the trails, GPS tracks.	Clare Local Development Company	Quarterly	
16	Trails, Conditions, counters to know number of people on the trails, GPS tracks.	South Kerry Partnership	Quarterly	South Kerry Walks Scheme

Item	Data-set	Data Owner/ Provider	Update frequency	Additional comments
17	Facilities, activities and events	Failte Ireland	Quarterly	https://data.gov.ie/dataset/activities https://failteireland.azure-api.net/opendata-api/v1/activities

Appendix C: Detailed comments and suggestions from workshops

- Would be nice to have navigation within trails or to get to the starting/access point of the trail
- Easy Access for Emergency Services, e.g. along Greenways
- It would be good to have a standard on how these things are labelled etc. “Fix your street” – people can say if there is an issue on their road etc
- Crowd sourcing positive:
    - Open Street Map – look at model
    - SAFE Software: Grading system for reliability
    - Earn badges etc / gamification, similar to Tripadvisor
- Crowd sourcing will have to go through the validation process and to be only available to a registered user, i.e. known to the system. QA can vary from place to place e.g. more stringent in protected areas, more open elsewhere. Need a good QA model for crowdsourced information.
- Data also TEMPORAL. Seasonal information is important
    - Seasonality
    - Tides
    - Open/Close times
    - Dates of development etc
    - Progression planning
- Data from elsewhere e.g. Garmin/suunto/Strava – how to integrate/allow integration. Validation against background mapping
- Non-GIS stakeholders might need another platform for data checking and validation
- MapGenie basemaps – public facing basemap
- Ancillary info: Toilets, bike hire, commercial guides, lunch spots etc
- Metadata about how it was captured:
    - Accuracy standards etc
    - Danger of loss in confidence
    - Currency of aerial imagery (secondary function)
- PROMPT for data updates periodically:
    - “Is this data still accurate?” No -> simple update platform
- Michelle Molumby: Good ideas on filters for public search e.g. baby/kids friendly, distance buffers, off-road, elevation etc
- Itinerary planner, not just finding amenity, includes full experience and planning of the journey or planning of putting some facilities at the amenity such as water fountain, a loo etc
- Outdoor Active Points:
    - Rewards for visiting sites
    - Pride of Place
- 1 single dataset for whole country
    - Can upload and take down what’s needed locally

    - Ensures not doubling work
    - Change management easier, ref road network, updates once only
    - For some features can work, e.g. trails that cross county bounds
    - Others maybe not, e.g. playgrounds – this is local only
    - Ref Lauren/Doug's project to upgrade trail data for whole country
- Splash.ie / beaches.ie, beach info, cannot be consumed down
- Metadata: currency
- Include GIS User Group – Helen & Barry in correspondence and share slides and info
- Open Data to be made available so that the public and app developers can download
- Ability to filter by activity, age, family friendly, location etc.
- Directions on the phone to area/activity access points
- Disabled Access
- Grades on activities such as river kayaking, rock climbing
- Facilities (cafes etc.)
- Links to festivals near by
- How busy trails via counter info
- Met Eireann data (day light/ tides)
- Blue flag beaches
- Strava integrated for popular cycling routes
- Strategic planning
- Knowledge of outdoor activities
- Event Management: Cycle, Wlking, Swimming, ParkRun
- New Amenities
- counters to know number of people on the trails
- Graph/demonstrate use of amenities, especially high-use times to avoid, e.g. Busiest times at Cliffs of Moher
- GPs / Health Practitioner / Social Prescription – need to know what is nearby
- Asset Management very important – this resource should be used as a Trail Monitoring and Maintenance System

Appendix D: Contact Details

The primary contact details for all queries relating to this document are:

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