Functional Requirements:

Goal:

Create a mapping tool to display the Totterdown Urban Nature Reserve

Submitting a piece of nature:

1. Location
    1.1.   Submissions can only be within the pre-defined Totterdown area.
    1.2.   Location given by placing pin on map OR providing current location of device.
    1.3.   Variety of pins available to use for viewing of submission e.g. Tree, pond, pollinator friendly plants icon on map.
2. Provision of data
    2.1.   Data added to map through a form system.
        2.1.1.   Form should be customisable by the user as to the best suit what they're adding and the level of knowledge of the user.
        2.1.2.   Mandatory fields:
            2.1.2.1.   Type of nature
            2.1.2.2.   Description
            2.1.2.3.   Tag (minimum one)
            2.1.2.4.   Name/username of author
            2.1.2.5.   Location (explained above)
            2.1.2.6.   Area size/dimensions
    2.2.   Selection of tags available to add to the submission.
        2.2.1.   Tags would encompass broad categories of nature, for example: 'Tree', 'Grasses', 'Shrub', 'Hedge', 'Pond'
        2.2.2.   Tags would allow for a succinct description of submissions.
        2.2.3.   Would simplify analytics and viewing submissions.
        2.2.4.   Addition of more specific tags (such as 'Spring Flowers') can be implemented to push and encourage specific focus points the organisation may have at any point.
        2.2.5.   Can be used to provide structure to submissions that are customisable.
    2.3.   Area/Dimensions of submissions
        2.3.1.   A way for users to provide dimensions or select the size of the area for the piece of nature they are submitting.
        2.3.2.   Ability to 'total' the areas managed for wildlife to assess progress towards 30% of Totterdown being managed for wildlife
    2.4.   Images
        2.4.1.   No ability to add or use images within the mapping application.
        2.4.2.   Images will be a focus for the social media aspect of the project.
3. Moderation of Submission
    3.1.   Ability for client to delete and manage submissions.
    3.2.   Implement a blacklist for inappropriate words in submissions.

Viewing Totterdown Urban Nature Reserve:

1. Map
    1.1.   All submissions are shown on the map through a pin.
    1.2.   Clicking on a pin would open the submission in an area to the right of the map.
        1.2.1.   This opened submission would show all the information provided.
    1.3.   Variety of pin icons visible on map as chosen by each individual submission's author
    1.4.   Ability to filter the map by certain tags and pins to be able to view all submissions of a certain type as a group.

Technical Requirements:

User Interface and Experience

- **Frontend Development:** Create an appealing interface and overlay for the integrated mapping tool so TRESA community members can navigate the map, input data and interact with key areas e.g. green spaces and wildlife. Also needs to be integrated into WordPress or use WordPress for the frontend dev.
- **Mapping Integration:** Integrate a Mapping tool such as Google Maps to allow users to visualise and interact with the map.
- **Image Upload and Storage:** Allow users to upload images of their nature observations.
- **Mobile Responsiveness:** To make the platform accessible and functional across various devices, the platform must be responsive.
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Backend Development

- **Backend:** Create and Develop a Database to handle a user request and data storage.
- **Database and Database Management:** Set up a database to store input user data, wildlife and other natural observations.
- **API Design:** Need to create an API to communicate the backend data with the frontend interface to upload data every week.
- **Data Validation and Security:** Implement validation mechanisms and measures to protect against vulnerabilities for example, explicit user input.
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Integration with External Mapping Service

- **Integrate with Mapping Service:** Connect the platform with a mapping service to display key observations on the map and facilitate some interactions.
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User Interaction and Engagement

- **Feedback Mechanism:** Provide a way for users to report issues, suggest issues and offer feedback on the platform.

Compliance and Legal

- **Legal Review:** Ensure that the platform is compliant with laws and regulation surrounding user-generated content while adhering to data protection regs like GDPR.
- **Privacy Control:** Implement controls to safeguard privacy like validated anonymous user input feature.
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Support/Feedback and Maintenance

- **User Support System:** Needs to be a system to address user feedback and issues.
- **Documentation:** Need to document code, API endpoints and architectures for future development and to ensure project maintainability.
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Accessibility

- **Accessibility standards:** Ensure platform complies with accessibility standards and can be navigated on different devices.
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Potential Add-ons BEYOND Scope:

- **Community Engagement Features:** A Community Forum which Enables users to engage with each other through likes, comments etc.
- **Push Notifications:** Implement a system which notifies TRESA members about activities on the plan.
- **Version Storage and Control:** Manage and name code versions to track changes and facilitate collaboration while ensuring maintainability.
- **Integrate with External APIs:** Potentially connect with external APIs for additional data sources and services related to nature (if we can find relevant data)
- **Scalability:** Design the system to handle potential growth in user numbers and data

Document Sign Off:

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