Trek4Free Ingestion Pipeline Notes

Overview: This document outlines the initial ingestion pipeline strategy for the Trek4Free project. It is designed for future troubleshooting, onboarding, or rebuilding if needed.

🔧 Current Strategy (MVP Phase)

Language: JavaScript **Platform:** Netlify Functions **Storage:** GitHub JSON (`/data/trail_cards.json`)
Trigger: Manual for now (via `fetch()` or upload)

Pipeline Flow:

1. **Source Identification**: Identify manual or API sources like AllTrails, RIDB, USGS.
2. **Fetch** (optional): Use `fetch()` in Netlify function or local script to grab remote data.
3. **Parse**: Clean/transform data into `trail_cards.json` schema.
4. **Save**: Write/update the local JSON file and commit to GitHub.
5. **Render**: The `trail-notes.html` file loads and renders from `trail_cards.json`.

🔗 Benefits

- SEO-Friendly
- Low-cost (Netlify + GitHub = free)
- Fast local development
- Full control

🔩 Limitations

- No real-time updates
- No backend DB filtering or sorting
- Manual updates or scripted only

🔐 Future Upgrade Path

Language: Python (via Firebase Functions) **Storage:** Firebase Firestore (cloud NoSQL database) **Pipeline Flow:**

1. Schedule ingestion jobs via cron (e.g., daily)
2. Scrape/APIs into Firestore
3. Render `trail-notes.html` dynamically or hydrate front-end from Firestore
4. Enable search/filtering/sorting client-side via Firestore queries

Bonus Options:

- AI summaries, tags, trail highlights
- Weather integrations
- Community review ingestion

🔒 **Key File:** `trail_cards.json`

```json
[
  {
    "name": "Devil's Waterhole",
    "location": "Inks Lake State Park, Texas",
    "activity": "Swimming",
    "difficulty": "Easy",
    "length": "0.25 mi",
    "description": "A popular swimming and cliff-jumping spot in the Highland
Lakes.",
    "map_url": "https://example.com/devils-waterhole",
    "image_url": "images/devils-waterhole.png"
  }
]
```

Team Note: Revisit this document anytime we hit ingestion, data scale, or performance issues. This is our living roadmap.

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