

Capstone One-Page Summary: OSM Roads-Over-Time (Western Sahara)

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I built a standalone, reproducible OSM roads-over-time workflow for Western Sahara using OSM relation R2559126 and the ohsome history API (year-end snapshots, 2008-2025).

Implemented

- New script: `src/ingest/osm_roads_timeseries.py`
- Boundary provenance saved from Nominatim lookup to:
`data/reference/2026-02-19__capstone__boundary__v01__western-sahara-r2559126.geojson`
- Queries used:
 - `/v1/elements/length (total)`, `/v1/elements/length/groupBy/tag (highway)`,
`/v1/elements/length/groupBy/tag (surface)`
- Drivable filter:
type:way and highway in (motorway,trunk,primary,secondary,tertiary,unclassified,residential,
motorway_link,trunk_link,primary_link,secondary_link,tertiary_link,road,service)

Canonical outputs

- `out/2026-02-19__capstone__roads-timeseries__v01__western-sahara-osm.csv`
- `out/2026-02-19__capstone__roads-timeseries__v01__western-sahara-osm-metadata.json`

Validation

- 18 rows (2008..2025 contiguous), all metrics non-negative
- `source_relation_id=2559126` on all rows
- Max surface gap: 0.00003 km | max class gap: 0.00002 km

Docs updated

- `INDEX.md` (Latest updated with new outputs)
- `data/README_sources.md` (Nominatim/ohsome provenance + hashes)

Run

```
python3 src/ingest/osm_roads_timeseries.py --out_dir /Users/reesehollister/Capstone/out --data_dir /Users/reesehollister/Capstone/data --relation_id 2559126 --start_year 2008 --end_year 2025 --version v01
```