<https://gemini.google.com/u/1/app/bf28f389cd093e55?is_sa=1&android-min-version=301356232&ios-min-version=322.0&campaign_id=bkws&utm_source=google&utm_medium=cpc&utm_campaign=2024enUS_gemfeb&pt=9008&mt=8&ct=p-growth-sem-bkws>

<https://gemini.google.com/u/1/app/b90970622259e225>

\* \* \* \* \*

### 3\. Updated Production-Ready Specification - `public.transport\_stops\_details` (V2.1)

Version: 2.1 (Based on original V1.1, V2.1 Checklist REV 05-18-25-A applied)

Date: May 18, 2025

1. Purpose & Primary Use-Cases

The transport\_stops\_details table stores specific, detailed information for waypoints categorized as public transportation stops. It extends the generic waypoints entry to identify the stop type, operators, key lines/destinations, facilities, ticketing information, and provide crucial links to external official timetables. This supports pilgrims in planning journeys by finding detailed stop information, accessing timetables, identifying facilities, and understanding ticketing. Administrators curate and maintain this data.

2. Schema

| column | data\_type | constraints | description |

| :------------------------------------- | :------------------------ | :---------------------------------------------------------------------------------------------------------------------------------------- | :------------------------------------------------------------------------------------------------------------------------------------------- |

| waypoint\_id | bigint | Primary Key, Foreign Key to waypoints(id) ON DELETE CASCADE | Links to the generic waypoints table. This is the PK. |

| stop\_type\_id | integer | Not Null, Foreign Key to transport\_stop\_types\_master(id) ON DELETE RESTRICT | The specific type of transport stop, linking to transport\_stop\_types\_master. |

| operator\_names\_text | text[] | Nullable | Array of main transport company names operating at this stop (free text). Elements are translatable. V2.1. |

| operator\_stop\_code\_primary | text | Nullable, CHECK (operator\_stop\_code\_primary IS NULL OR (length(operator\_stop\_code\_primary) > 0 AND length(operator\_stop\_code\_primary) &lt;= 50)) | Official internal stop code used by the primary operator, if known. |

| gtfs\_stop\_id | text | Nullable, Unique, CHECK (gtfs\_stop\_id IS NULL OR (length(gtfs\_stop\_id) > 0 AND length(gtfs\_stop\_id) &lt;= 100)) | General Transit Feed Specification (GTFS) stop\_id, if available. Unique if populated. |

| lines\_or\_routes\_served\_summary | text | Nullable | Human-readable summary of key lines, route numbers, or major destinations served. (Translatable via public.translations) |

| specific\_timetable\_url | text | Nullable, CHECK (specific\_timetable\_url IS NULL OR (length(specific\_timetable\_url) &lt;= 2048 AND specific\_timetable\_url ~\* '^https?://.+')) | Direct deep link to an online timetable page for this specific stop or a key line. |

| general\_operator\_info\_url | text | Nullable, CHECK (general\_operator\_info\_url IS NULL OR (length(general\_operator\_info\_url) &lt;= 2048 AND general\_operator\_info\_url ~\* '^https?://.+')) | Link to the general information/journey planner page of the primary operator. |

| ticketing\_information\_notes | text | Nullable | Notes on where and how to buy tickets. (Translatable via public.translations) |

| stop\_facility\_ids | integer[] | Nullable | Array of Foreign Keys to transport\_stop\_facilities\_master(id), indicating available facilities. Validated by trigger. |

| platform\_track\_bay\_information\_notes | text | Nullable | For larger stations, notes about typical platform/track/bay assignments. (Translatable via public.translations) |

| frequency\_of\_service\_general\_notes | text | Nullable | General notes on service frequency. Specific times via operator URL. (Translatable via public.translations) |

| is\_major\_interchange\_node | boolean | Not Null, Default false | Flags if this stop is a significant interchange point. |

| accessibility\_notes\_transport\_stop | text | Nullable | Notes on the accessibility of the station/stop itself. (Translatable via public.translations) |

| bicycle\_transport\_on\_service\_notes | text | Nullable | Information on bicycle transport conditions/fees. (Translatable via public.translations) |

| notes\_for\_pilgrims\_at\_stop | text | Nullable | Specific advice or tips for pilgrims using this stop. (Translatable via public.translations) |

| data\_last\_verified\_at | timestamp with time zone | Nullable | Timestamp when details (especially URLs, operator info) were last editorially verified. |

| created\_at | timestamp with time zone | Not Null, Default now() | Timestamp of record creation. |

| created\_by\_profile\_id | uuid | Nullable, Foreign Key to profiles(id) ON DELETE SET NULL | Profile ID of the user who created this record. |

| updated\_at | timestamp with time zone | Not Null, Default now() | Timestamp of last update (auto-updated by trigger). |

| updated\_by\_profile\_id | uuid | Nullable, Foreign Key to profiles(id) ON DELETE SET NULL | Profile ID of the user who last updated this record. |

| deleted\_at | timestamp with time zone | Nullable | Timestamp for soft deletion (though usually cascaded from waypoints). |

3. PostgreSQL DDL

SQL

```

-- Assumes master tables:

-- public.waypoints (with id BIGINT PK, content\_visibility\_status\_id FK to content\_statuses\_master)

-- public.transport\_stop\_types\_master (with id INTEGER PK, is\_active BOOLEAN)

-- public.transport\_stop\_facilities\_master (with id INTEGER PK, is\_active BOOLEAN)

-- public.profiles (with id UUID PK)

-- public.content\_statuses\_master (with id BIGINT PK, code TEXT UNIQUE)

-- Assumes functions:

-- public.set\_current\_timestamp\_updated\_at() OR extensions.moddatetime()

-- public.cleanup\_related\_translations(TEXT, TEXT)

-- public.has\_role(TEXT)

CREATE TABLE public.transport\_stops\_details (

waypoint\_id BIGINT PRIMARY KEY,

stop\_type\_id INTEGER NOT NULL,

operator\_names\_text TEXT[] NULL,

operator\_stop\_code\_primary TEXT NULL CHECK (operator\_stop\_code\_primary IS NULL OR (length(operator\_stop\_code\_primary) > 0 AND length(operator\_stop\_code\_primary) <= 50)),

gtfs\_stop\_id TEXT NULL UNIQUE CHECK (gtfs\_stop\_id IS NULL OR (length(gtfs\_stop\_id) > 0 AND length(gtfs\_stop\_id) <= 100)),

lines\_or\_routes\_served\_summary TEXT NULL,

specific\_timetable\_url TEXT NULL CHECK (specific\_timetable\_url IS NULL OR (length(specific\_timetable\_url) <= 2048 AND specific\_timetable\_url ~\* '^https?://.+')),

general\_operator\_info\_url TEXT NULL CHECK (general\_operator\_info\_url IS NULL OR (length(general\_operator\_info\_url) <= 2048 AND general\_operator\_info\_url ~\* '^https?://.+')),

ticketing\_information\_notes TEXT NULL,

stop\_facility\_ids INTEGER[] NULL,

platform\_track\_bay\_information\_notes TEXT NULL,

frequency\_of\_service\_general\_notes TEXT NULL,

is\_major\_interchange\_node BOOLEAN NOT NULL DEFAULT FALSE,

accessibility\_notes\_transport\_stop TEXT NULL,

bicycle\_transport\_on\_service\_notes TEXT NULL,

notes\_for\_pilgrims\_at\_stop TEXT NULL,

data\_last\_verified\_at TIMESTAMPTZ NULL,

created\_at TIMESTAMPTZ NOT NULL DEFAULT now(),

created\_by\_profile\_id UUID NULL,

updated\_at TIMESTAMPTZ NOT NULL DEFAULT now(),

updated\_by\_profile\_id UUID NULL,

deleted\_at TIMESTAMPTZ NULL,

CONSTRAINT fk\_waypoint

FOREIGN KEY(waypoint\_id)

REFERENCES public.waypoints(id)

ON DELETE CASCADE,

CONSTRAINT fk\_stop\_type

FOREIGN KEY(stop\_type\_id)

REFERENCES public.transport\_stop\_types\_master(id)

ON DELETE RESTRICT,

CONSTRAINT fk\_created\_by\_profile

FOREIGN KEY(created\_by\_profile\_id)

REFERENCES public.profiles(id)

ON DELETE SET NULL,

CONSTRAINT fk\_updated\_by\_profile

FOREIGN KEY(updated\_by\_profile\_id)

REFERENCES public.profiles(id)

ON DELETE SET NULL

);

COMMENT ON TABLE public.transport\_stops\_details IS 'Specific details for public transport stops, extending waypoints. Version 2.1';

COMMENT ON COLUMN public.transport\_stops\_details.waypoint\_id IS 'PK. Links to the generic waypoints table. ON DELETE CASCADE. V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.stop\_type\_id IS 'FK to transport\_stop\_types\_master.id. Specific type of transport stop. ON DELETE RESTRICT. V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.operator\_names\_text IS 'Array of main transport company names (free text for V2.1). Elements are translatable. V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.operator\_stop\_code\_primary IS 'Official internal stop code used by the primary operator. Max 50 chars. V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.gtfs\_stop\_id IS 'General Transit Feed Specification (GTFS) stop\_id. Unique if populated. Max 100 chars. V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.lines\_or\_routes\_served\_summary IS 'Human-readable summary of key lines/routes served. (Translatable via public.translations). V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.specific\_timetable\_url IS 'Direct deep link to online timetable for this specific stop/line. Validated URL format. Max 2048 chars. V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.general\_operator\_info\_url IS 'Link to general timetable/journey planner of primary operator. Validated URL format. Max 2048 chars. V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.ticketing\_information\_notes IS 'Notes on where and how to buy tickets. (Translatable via public.translations). V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.stop\_facility\_ids IS 'Array of FKs to transport\_stop\_facilities\_master.id. Available facilities. Validated by trigger (checks existence and is\_active status). V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.platform\_track\_bay\_information\_notes IS 'Notes on platform/track/bay assignments. (Translatable via public.translations). V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.frequency\_of\_service\_general\_notes IS 'General notes on service frequency. (Translatable via public.translations). V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.is\_major\_interchange\_node IS 'Flags if this stop is a significant interchange point. NOT NULL DEFAULT FALSE. V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.accessibility\_notes\_transport\_stop IS 'Notes on accessibility of the stop itself. (Translatable via public.translations). V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.bicycle\_transport\_on\_service\_notes IS 'Information on bicycle transport conditions/fees. (Translatable via public.translations). V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.notes\_for\_pilgrims\_at\_stop IS 'Specific advice for pilgrims using this stop. (Translatable via public.translations). V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.data\_last\_verified\_at IS 'Timestamp when details (especially URLs, operator info) were last editorially verified. V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.created\_at IS 'Timestamp of record creation. NOT NULL DEFAULT now(). V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.created\_by\_profile\_id IS 'Profile ID of the user who created this record. FK to public.profiles(id) ON DELETE SET NULL. V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.updated\_at IS 'Timestamp of last update. Auto-updated by trigger. NOT NULL DEFAULT now(). V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.updated\_by\_profile\_id IS 'Profile ID of the user who last updated this record. FK to public.profiles(id) ON DELETE SET NULL. V2.1';

COMMENT ON COLUMN public.transport\_stops\_details.deleted\_at IS 'Timestamp for soft deletion (usually cascaded from waypoints). V2.1';

-- Indexes

CREATE INDEX ix\_transport\_stops\_details\_stop\_type\_id ON public.transport\_stops\_details(stop\_type\_id);

CREATE INDEX ix\_transport\_stops\_details\_gtfs\_stop\_id ON public.transport\_stops\_details(gtfs\_stop\_id) WHERE gtfs\_stop\_id IS NOT NULL;

CREATE INDEX ix\_transport\_stops\_details\_facility\_ids ON public.transport\_stops\_details USING GIN (stop\_facility\_ids) WHERE stop\_facility\_ids IS NOT NULL AND array\_length(stop\_facility\_ids, 1) > 0;

CREATE INDEX ix\_transport\_stops\_details\_deleted\_at ON public.transport\_stops\_details(deleted\_at) WHERE deleted\_at IS NOT NULL;

CREATE INDEX ix\_transport\_stops\_details\_created\_by\_profile\_id ON public.transport\_stops\_details (created\_by\_profile\_id) WHERE created\_by\_profile\_id IS NOT NULL;

CREATE INDEX ix\_transport\_stops\_details\_updated\_by\_profile\_id ON public.transport\_stops\_details (updated\_by\_profile\_id) WHERE updated\_by\_profile\_id IS NOT NULL;

-- Triggers

CREATE TRIGGER trigger\_transport\_stops\_details\_set\_updated\_at

BEFORE UPDATE ON public.transport\_stops\_details

FOR EACH ROW

EXECUTE FUNCTION public.set\_current\_timestamp\_updated\_at(); -- Or extensions.moddatetime()

COMMENT ON TRIGGER trigger\_transport\_stops\_details\_set\_updated\_at ON public.transport\_stops\_details IS 'Trigger to automatically update updated\_at timestamp on row modification. V2.1';

CREATE OR REPLACE FUNCTION public.check\_transport\_stop\_facility\_ids()

RETURNS TRIGGER AS $$

DECLARE

facility\_id INTEGER;

facility\_record RECORD; -- Used to fetch is\_active status

BEGIN

-- Only run the check if stop\_facility\_ids is actually being changed

IF TG\_OP = 'INSERT' OR (TG\_OP = 'UPDATE' AND NEW.stop\_facility\_ids IS DISTINCT FROM OLD.stop\_facility\_ids) THEN

IF NEW.stop\_facility\_ids IS NOT NULL AND array\_length(NEW.stop\_facility\_ids, 1) > 0 THEN

FOREACH facility\_id IN ARRAY NEW.stop\_facility\_ids LOOP

SELECT tsfm.is\_active INTO facility\_record

FROM public.transport\_stop\_facilities\_master tsfm

WHERE tsfm.id = facility\_id;

IF NOT FOUND THEN

RAISE EXCEPTION 'Invalid facility ID "%" in stop\_facility\_ids. It does not exist in transport\_stop\_facilities\_master.', facility\_id;

END IF;

IF facility\_record.is\_active IS NOT TRUE THEN -- Check if the fetched is\_active status is true

RAISE EXCEPTION 'Facility ID "%" in stop\_facility\_ids is not active in transport\_stop\_facilities\_master.', facility\_id;

END IF;

END LOOP;

END IF;

END IF;

RETURN NEW;

END;

$$ LANGUAGE plpgsql SECURITY DEFINER SET search\_path = public; -- Hardened search\_path for SECURITY DEFINER

COMMENT ON FUNCTION public.check\_transport\_stop\_facility\_ids() IS 'Ensures that all facility IDs in transport\_stops\_details.stop\_facility\_ids exist and are active in transport\_stop\_facilities\_master. SECURITY DEFINER. V2.1.';

CREATE TRIGGER trigger\_check\_transport\_stop\_facility\_ids

BEFORE INSERT OR UPDATE OF stop\_facility\_ids ON public.transport\_stops\_details

FOR EACH ROW

EXECUTE FUNCTION public.check\_transport\_stop\_facility\_ids();

COMMENT ON TRIGGER trigger\_check\_transport\_stop\_facility\_ids ON public.transport\_stops\_details IS 'Before insert or update of stop\_facility\_ids, validates elements against transport\_stop\_facilities\_master (existence and is\_active status). V2.1.';

CREATE TRIGGER trigger\_cleanup\_transport\_stops\_details\_translations

AFTER DELETE ON public.transport\_stops\_details

FOR EACH ROW

EXECUTE FUNCTION public.cleanup\_related\_translations('transport\_stops\_details', 'waypoint\_id');

COMMENT ON TRIGGER trigger\_cleanup\_transport\_stops\_details\_translations ON public.transport\_stops\_details IS 'After deleting a transport\_stops\_details record, remove its associated entries from the translations table using waypoint\_id as row\_foreign\_key. V2.1.';

```

4. JSON Schema Mirror

JSON

```

{

"title": "transport\_stop\_detail",

"description": "Stores specific details for waypoints that are public transportation stops, focusing on operational info and links to authoritative schedules. Version 2.1",

"type": "object",

"properties": {

"waypoint\_id": {

"type": "integer",

"format": "int64",

"description": "PK, FK to waypoints.id (BIGINT). ON DELETE CASCADE."

},

"stop\_type\_id": {

"type": "integer",

"description": "FK to transport\_stop\_types\_master.id. Specific type of transport stop. NOT NULL. ON DELETE RESTRICT."

},

"operator\_names\_text": {

"type": ["array", "null"],

"items": { "type": "string" },

"description": "Array of main transport company names (free text for V2.1). Elements are translatable."

},

"operator\_stop\_code\_primary": {

"type": ["string", "null"],

"maxLength": 50,

"pattern": "^(?!\\s\*$).+",

"description": "Official internal stop code used by the primary operator. Must not be empty if not NULL."

},

"gtfs\_stop\_id": {

"type": ["string", "null"],

"maxLength": 100,

"pattern": "^(?!\\s\*$).+",

"description": "GTFS stop\_id, unique if populated. Must not be empty if not NULL."

},

"lines\_or\_routes\_served\_summary": {

"type": ["string", "null"],

"description": "Human-readable summary of key lines/routes served. (Translatable via public.translations)."

},

"specific\_timetable\_url": {

"type": ["string", "null"],

"format": "url",

"maxLength": 2048,

"pattern": "^https?://.+",

"description": "Direct deep link to online timetable for this stop/line. Validated URL."

},

"general\_operator\_info\_url": {

"type": ["string", "null"],

"format": "url",

"maxLength": 2048,

"pattern": "^https?://.+",

"description": "Link to general timetable/journey planner of primary operator. Validated URL."

},

"ticketing\_information\_notes": {

"type": ["string", "null"],

"description": "Notes on where and how to buy tickets. (Translatable via public.translations)."

},

"stop\_facility\_ids": {

"type": ["array", "null"],

"items": { "type": "integer" },

"description": "Array of FKs to transport\_stop\_facilities\_master.id. Available facilities. Validated by trigger (checks existence and is\_active status)."

},

"platform\_track\_bay\_information\_notes": {

"type": ["string", "null"],

"description": "Notes on platform/track/bay assignments. (Translatable via public.translations)."

},

"frequency\_of\_service\_general\_notes": {

"type": ["string", "null"],

"description": "General notes on service frequency. (Translatable via public.translations)."

},

"is\_major\_interchange\_node": {

"type": "boolean",

"default": false,

"description": "Flags if this stop is a significant interchange point. NOT NULL."

},

"accessibility\_notes\_transport\_stop": {

"type": ["string", "null"],

"description": "Notes on accessibility of the stop. (Translatable via public.translations)."

},

"bicycle\_transport\_on\_service\_notes": {

"type": ["string", "null"],

"description": "Info on bicycle transport. (Translatable via public.translations)."

},

"notes\_for\_pilgrims\_at\_stop": {

"type": ["string", "null"],

"description": "Specific advice for pilgrims at this stop. (Translatable via public.translations)."

},

"data\_last\_verified\_at": {

"type": ["string", "null"],

"format": "date-time",

"description": "Timestamp when details (URLs, operator info) were last editorially verified."

},

"created\_at": {

"type": "string",

"format": "date-time",

"description": "Timestamp of record creation. NOT NULL DEFAULT now().",

"readOnly": true

},

"created\_by\_profile\_id": {

"type": ["string", "null"],

"format": "uuid",

"description": "Profile ID of the user who created this record. FK to public.profiles(id) ON DELETE SET NULL."

},

"updated\_at": {

"type": "string",

"format": "date-time",

"description": "Timestamp of last update. Auto-updated by trigger. NOT NULL DEFAULT now().",

"readOnly": true

},

"updated\_by\_profile\_id": {

"type": ["string", "null"],

"format": "uuid",

"description": "Profile ID of the user who last updated this record. FK to public.profiles(id) ON DELETE SET NULL."

},

"deleted\_at": {

"type": ["string", "null"],

"format": "date-time",

"description": "Timestamp for soft deletion (usually cascaded from waypoints).",

"readOnly": true

}

},

"required": ["waypoint\_id", "stop\_type\_id", "is\_major\_interchange\_node", "created\_at", "updated\_at"],

"primary\_key": ["waypoint\_id"],

"unique\_constraints": [

{"columns": ["gtfs\_stop\_id"], "name": "transport\_stops\_details\_gtfs\_stop\_id\_key", "allow\_null\_results": true}

],

"foreign\_keys": [

{"columns": ["waypoint\_id"], "references\_table": "public.waypoints", "references\_columns": ["id"], "on\_delete": "CASCADE"},

{"columns": ["stop\_type\_id"], "references\_table": "public.transport\_stop\_types\_master", "references\_columns": ["id"], "on\_delete": "RESTRICT"},

{"columns": ["created\_by\_profile\_id"], "references\_table": "public.profiles", "references\_columns": ["id"], "on\_delete": "SET NULL"},

{"columns": ["updated\_by\_profile\_id"], "references\_table": "public.profiles", "references\_columns": ["id"], "on\_delete": "SET NULL"}

]

}

```

5. Relationships & Integrity

- Primary Key: `waypoint\_id` (BIGINT).

- Foreign Keys:

- `waypoint\_id` references `public.waypoints(id)` ON DELETE CASCADE.

- `stop\_type\_id` references `public.transport\_stop\_types\_master(id)` ON DELETE RESTRICT.

- `created\_by\_profile\_id` references `public.profiles(id)` ON DELETE SET NULL.

- `updated\_by\_profile\_id` references `public.profiles(id)` ON DELETE SET NULL.

- Array Foreign Keys: `stop\_facility\_ids` (integer[]) contains IDs referencing `transport\_stop\_facilities\_master(id)`. Integrity (existence and `is\_active` status) is enforced by the `trigger\_check\_transport\_stop\_facility\_ids` database trigger.

- Unique Constraints: `gtfs\_stop\_id` (nullable unique).

6. Multilingual Strategy

- Directly Translatable Fields: `operator\_names\_text` (elements), `lines\_or\_routes\_served\_summary`, `ticketing\_information\_notes`, `platform\_track\_bay\_information\_notes`, `frequency\_of\_service\_general\_notes`, `accessibility\_notes\_transport\_stop`, `bicycle\_transport\_on\_service\_notes`, `notes\_for\_pilgrims\_at\_stop`. These store their primary language (English) content directly in this table; translations are managed in `public.translations`.

- Via Master Tables: `stop\_type\_id` (label from `transport\_stop\_types\_master`) and `stop\_facility\_ids` (labels from `transport\_stop\_facilities\_master`) provide translatable content through their linked master tables.

- Orphan Cleanup: An `AFTER DELETE` trigger (`trigger\_cleanup\_transport\_stops\_details\_translations`) ensures associated translations are removed.

7. Role-Based Workflow & RLS Notes

- Content Management: Typically managed by Regional Content Managers or Platform Administrators.

- RLS Policies:

- 🟢 Public users can read details for waypoints that are published (e.g., `content\_statuses\_master.code = 'published\_live'`) and not soft-deleted, via a join to `waypoints` and `content\_statuses\_master`.

SQL

```

CREATE POLICY "select\_published\_transport\_stop\_details" ON public.transport\_stops\_details

FOR SELECT USING (

EXISTS (

SELECT 1 FROM public.waypoints w

JOIN public.content\_statuses\_master csm ON w.content\_visibility\_status\_id = csm.id

WHERE w.id = transport\_stops\_details.waypoint\_id

AND w.deleted\_at IS NULL

AND csm.code = 'published\_live' -- Standard V2.1 published code

)

);

```

- 🟢 Authorized roles (e.g., `admin\_platform`, `regional\_content\_manager`) can manage all aspects of `transport\_stops\_details` records linked to non-deleted waypoints. `waypoint\_id` cannot be changed on update.

SQL

```

CREATE POLICY "manage\_transport\_stop\_details\_for\_authorized\_roles" ON public.transport\_stops\_details

FOR ALL

USING (

(public.has\_role('admin\_platform') OR public.has\_role('regional\_content\_manager')) AND

EXISTS (SELECT 1 FROM public.waypoints w WHERE w.id = transport\_stops\_details.waypoint\_id AND w.deleted\_at IS NULL)

)

WITH CHECK (

(public.has\_role('admin\_platform') OR public.has\_role('regional\_content\_manager')) AND

EXISTS (SELECT 1 FROM public.waypoints w WHERE w.id = transport\_stops\_details.waypoint\_id AND w.deleted\_at IS NULL) AND

(TG\_OP = 'INSERT' OR waypoint\_id IS NOT DISTINCT FROM OLD.waypoint\_id)

);

```

- RLS relies on helper functions `public.has\_role(TEXT)` and assumes `waypoints.content\_visibility\_status\_id` correctly links to a `content\_statuses\_master` table with a `code` column.

8. ENUM vs Lookup Discussion

🟢 stop\_type\_id correctly references transport\_stop\_types\_master (promoted from an ENUM).

🟢 stop\_facility\_ids correctly references transport\_stop\_facilities\_master (promoted from an ENUM array).

Reason: Provides richer data, translatability, UI support (icons, descriptions), and maintainability for these classifications.

9. UI/UX Enablement

- Icons & Filters: `stop\_type\_id` and `stop\_facility\_ids` (via their master tables) drive UI icons and filtering capabilities.

- Key Information Display: Crucial fields for pilgrim planning include `operator\_names\_text`, `lines\_or\_routes\_served\_summary`, URLs, and notes on ticketing and frequency.

- Important Flags: `is\_major\_interchange\_node` highlights key transfer points.

10. Auditing & Lifecycle Management

- Standard Audit Columns: `created\_at`, `updated\_at` (auto-updated), `created\_by\_profile\_id`, `updated\_by\_profile\_id`.

- Specific Audit: `data\_last\_verified\_at` for tracking freshness of operational data.

- Soft Delete: `deleted\_at` field for soft deletion, typically mirroring the parent `waypoints` record's state.

- Triggers: `updated\_at` auto-update trigger. Array FK validation trigger for `stop\_facility\_ids`. Orphaned translations cleanup trigger.

11. Scalability & Future-Proofing

- Structure: 1:1 relationship with `waypoints`. Scalability depends on the `waypoints` table.

- GTFS ID: Inclusion of `gtfs\_stop\_id` allows for future integration with GTFS data.

- Operator Management: `operator\_names\_text` is free text for V2.1; future enhancement could link to a `transport\_operators\_master` table.

12. Next-Action Checklist

- 🔴 Master Tables: Ensure `public.waypoints`, `public.transport\_stop\_types\_master` (with `is\_active`), `public.transport\_stop\_facilities\_master` (with `is\_active`), `public.profiles`, and `public.content\_statuses\_master` tables are created and populated as prerequisites.

- 🔴 Helper Functions: Ensure `public.set\_current\_timestamp\_updated\_at()` (or `extensions.moddatetime`), `public.cleanup\_related\_translations(TEXT, TEXT)`, and `public.has\_role(TEXT)` functions are defined and operational.

- 🔴 Create Table: Execute the DDL for `public.transport\_stops\_details` (Version 2.1).

- 🔴 Create Indexes: Apply all defined indexes, including for audit FKs. Rename indexes for consistency (e.g., `ix\_transport\_stops\_details\_stop\_type\_id`).

- 🔴 Apply Triggers:

- `trigger\_transport\_stops\_details\_set\_updated\_at`.

- `trigger\_check\_transport\_stop\_facility\_ids` (after defining `public.check\_transport\_stop\_facility\_ids()`).

- `trigger\_cleanup\_transport\_stops\_details\_translations`.

- 🔴 Array FK Integrity: Thoroughly test the `check\_transport\_stop\_facility\_ids()` trigger, ensuring it correctly uses the `is\_active` flag from `transport\_stop\_facilities\_master`.

- 🟠 URL Validation: Confirm database-level URL regex CHECK constraints are effective.

- 🟠 RLS Policies: Review, adapt (especially role names and `content\_statuses\_master` usage), and apply the RLS policies.

- 🟢 Data Migration: Plan data migration if upgrading from a previous schema version (e.g., from ENUMs to FKs for `stop\_type\_id` and `stop\_facility\_ids`).

- 🟢 Documentation: Update any user-facing or technical documentation regarding transport stop details.

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