<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/1d4834db0819faf2>

<https://gemini.google.com/u/1/app/d423d51e9f40da78>

### 3\. Updated Production-Ready Specification (`shops\_and\_services\_details`)

This document details the structure, purpose, and considerations for the `shops\_and\_services\_details` table, Version 1.3.1 (reflecting RLS role name alignment and removal of denormalized labels). This version incorporates full V2 enhancements including robust audit fields, refined i18n strategy, array foreign key integrity with active status checks, media linking, `is\_active` checks for its single foreign keys to master tables, and refined constraints.

1\. Purpose & Primary Use-Cases

The `shops\_and\_services\_details` table stores specific information for waypoints that function as shops or provide practical services essential for pilgrims (e.g., pharmacies, ATMs, grocery stores, post offices, tourist information). This table extends the generic `waypoints` entry to include operational details such as the specific service type, opening hours (both structured and textual notes), contact information, languages spoken, payment methods accepted, general price range, and any service-specific notes or accessibility information relevant to pilgrims. This data enables pilgrims to easily find, assess, and utilize essential services along their journey.

Key user-story touchpoints:

- Pilgrim: Finding essential services like ATMs, pharmacies, or laundromats in a town or along the route.

- Pilgrim: Checking opening hours, contact details, and payment options for these services.

- Pilgrim: Getting specific advice, like emergency pharmacy procedures or what a particular Tabacchi shop sells that might be useful.

- Admin/Content Manager: Adding, updating, and curating detailed information for various shops and services to ensure accuracy and usefulness for pilgrims.

- System/UI: Powering map displays with service-specific icons, enabling filtered searches for practical needs, and providing comprehensive detail pages for each service point.

2\. Schema (`shops\_and\_services\_details`)

| column | data\_type | constraints | description |

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

| `service\_type\_id` | `INTEGER` | Not Null, Foreign Key to `public.shop\_service\_types\_master(id)` ON DELETE RESTRICT | The primary type of shop or service offered, linking to an \*active\* `shop\_service\_types\_master` record. |

| `operator\_or\_brand\_name` | `TEXT` | Nullable, CHECK (`operator\_or\_brand\_name` IS NULL OR length(`operator\_or\_brand\_name`) &lt;= 150) | Name of the specific operator or brand (e.g., "Poste Italiane," "Farmacia Dr. Rossi"). Primary reference language (English) text. (Translatable via `public.translations`) |

| `products\_or\_services\_summary` | `TEXT` | Nullable | Brief summary of key products/services offered. Primary reference language (English) text. (Translatable via `public.translations`) |

| `is\_open\_24\_hours` | `BOOLEAN` | Not Null, Default `false` | Indicates if the service is available 24/7 (e.g., some ATMs). |

| `opening\_hours\_structured` | `JSONB` | Nullable, CHECK (`opening\_hours\_structured` IS NULL OR jsonb\_type\_of(`opening\_hours\_structured`) IN ('object', 'array')) | Structured opening hours (e.g., schema.org format) for machine readability. Adheres to the centrally defined project schema. |

| `opening\_hours\_text\_notes` | `TEXT` | Nullable | Human-readable summary, exceptions, or general notes about opening hours. Primary reference language (English) text. (Translatable via `public.translations`) |

| `opening\_hours\_last\_verified\_at` | `TIMESTAMPTZ` | Nullable | When the opening hours were last checked/verified by an editor or reliable source. |

| `emergency\_service\_details` | `TEXT` | Nullable | For services like pharmacies, details on emergency/after-hours availability or contact. Primary reference language (English) text. (Translatable via `public.translations`) |

| `contact\_phone\_service` | `TEXT` | Nullable, CHECK (`contact\_phone\_service` IS NULL OR length(`contact\_phone\_service`) &lt;= 50) | Specific contact phone number for this service/shop. |

| `contact\_email\_service` | `TEXT` | Nullable, CHECK (`contact\_email\_service` IS NULL OR (length(`contact\_email\_service`) &lt;= 254 AND `contact\_email\_service` ~\* '^[A-Za-z0-9.\_%+-]+@[A-Za-z0-9.-]+.[A-Za-z]{2,}$')) | Specific contact email for this service/shop. Validated format. |

| `website\_url\_service` | `TEXT` | Nullable, CHECK (`website\_url\_service` IS NULL OR (length(`website\_url\_service`) &lt;= 2048 AND `website\_url\_service` ~\* '^https?://.+')) | Specific website URL for this service/shop. Validated format. |

| `languages\_spoken\_codes` | `CHAR(2)[]` | Nullable | Array of ISO 639-1 language codes spoken by staff. Integrity (existence in `languages\_master` and language `is\_active\_for\_platform`) enforced by DB trigger. |

| `payment\_method\_ids` | `INTEGER[]` | Nullable | Array of FKs to `payment\_methods\_master(id)`. Indicates accepted payment methods. Integrity (existence and `is\_active` status) enforced by DB trigger. |

| `general\_price\_range\_id` | `INTEGER` | Nullable, Foreign Key to `public.establishment\_price\_ranges\_master(id)` ON DELETE SET NULL | General price level if applicable (e.g., for a gear shop), linking to an \*active\* `establishment\_price\_ranges\_master` record. |

| `accessibility\_notes\_service` | `TEXT` | Nullable | Specific notes regarding accessibility for this shop/service, supplementing `waypoints.waypoint\_accessibility\_notes`. Primary reference language (English) text. (Translatable via `public.translations`) |

| `service\_specific\_details\_notes` | `TEXT` | Nullable | Other relevant details unique to this service (e.g., ATM withdrawal limits, Post Office services available). Primary reference language (English) text. (Translatable via `public.translations`) |

| `data\_last\_verified\_at` | `TIMESTAMPTZ` | Nullable | Timestamp when overall details for this shop/service were last verified by an editor or reliable source. |

| `created\_at` | `TIMESTAMPTZ` | Not Null, Default `now()` | Timestamp of record creation. |

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

| `updated\_at` | `TIMESTAMPTZ` | Not Null, Default `now()` | Timestamp of last update (auto-updated by trigger). |

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

| `deleted\_at` | `TIMESTAMPTZ` | Nullable | Timestamp for soft deletion. Allows independent lifecycle for this detail record if a specific service closes. |

3\. PostgreSQL DDL

SQL

```

-- Ensure prerequisite tables are V2 compliant and created first:

-- public.waypoints (BIGINT id PK, content\_visibility\_status\_id INTEGER, deleted\_at TIMESTAMPTZ)

-- public.profiles (UUID id PK, roles TEXT[])

-- public.media (UUID id PK)

-- public.media\_roles\_master (TEXT code PK)

-- public.translations (for i18n)

-- public.content\_statuses\_master (INTEGER id PK, is\_publicly\_visible BOOLEAN)

-- public.shop\_service\_types\_master (Version 1.2.1 - with label, is\_active, audit, triggers, RLS)

-- public.payment\_methods\_master (Version 1.1 - with label, is\_active, audit, triggers, RLS)

-- public.establishment\_price\_ranges\_master (Version 1.1 - with label, is\_active, audit, triggers, RLS)

-- public.languages\_master (Version 2.1 - language\_code CHAR(2) PK, display\_name\_en TEXT, is\_active\_for\_platform BOOLEAN)

-- Shops & Services Details Table (Version 1.3.1)

CREATE TABLE public.shops\_and\_services\_details (

waypoint\_id BIGINT PRIMARY KEY,

service\_type\_id INTEGER NOT NULL,

operator\_or\_brand\_name TEXT NULL CHECK (operator\_or\_brand\_name IS NULL OR length(operator\_or\_brand\_name) <= 150),

products\_or\_services\_summary TEXT NULL,

is\_open\_24\_hours BOOLEAN NOT NULL DEFAULT FALSE,

opening\_hours\_structured JSONB NULL CHECK (opening\_hours\_structured IS NULL OR jsonb\_type\_of(opening\_hours\_structured) IN ('object', 'array')),

opening\_hours\_text\_notes TEXT NULL,

opening\_hours\_last\_verified\_at TIMESTAMPTZ NULL,

emergency\_service\_details TEXT NULL,

contact\_phone\_service TEXT NULL CHECK (contact\_phone\_service IS NULL OR length(contact\_phone\_service) <= 50),

contact\_email\_service TEXT NULL CHECK (contact\_email\_service IS NULL OR (length(contact\_email\_service) <= 254 AND contact\_email\_service ~\* '^[A-Za-z0-9.\_%+-]+@[A-Za-z0-9.-]+\.[A-Za-z]{2,}$')),

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

languages\_spoken\_codes CHAR(2)[] NULL,

payment\_method\_ids INTEGER[] NULL,

general\_price\_range\_id INTEGER NULL,

accessibility\_notes\_service TEXT NULL,

service\_specific\_details\_notes 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\_service\_type FOREIGN KEY(service\_type\_id) REFERENCES public.shop\_service\_types\_master(id) ON DELETE RESTRICT,

CONSTRAINT fk\_general\_price\_range FOREIGN KEY(general\_price\_range\_id) REFERENCES public.establishment\_price\_ranges\_master(id) ON DELETE SET NULL,

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.shops\_and\_services\_details IS 'Specific details for shops and practical services, extending the waypoints table. Includes soft delete. Version 1.3.1';

COMMENT ON COLUMN public.shops\_and\_services\_details.waypoint\_id IS 'Links to the generic waypoints table. This is the PK.';

COMMENT ON COLUMN public.shops\_and\_services\_details.service\_type\_id IS 'FK to shop\_service\_types\_master. The primary type of shop or service. Referenced master record must be is\_active=true.';

COMMENT ON COLUMN public.shops\_and\_services\_details.operator\_or\_brand\_name IS 'Name of the specific operator or brand. Primary reference language (English) text. (Translatable via public.translations). Max 150 chars.';

COMMENT ON COLUMN public.shops\_and\_services\_details.products\_or\_services\_summary IS 'Brief summary of key products/services offered. Primary reference language (English) text. (Translatable via public.translations).';

COMMENT ON COLUMN public.shops\_and\_services\_details.is\_open\_24\_hours IS 'Indicates if the service is available 24/7 (e.g., some ATMs).';

COMMENT ON COLUMN public.shops\_and\_services\_details.opening\_hours\_structured IS 'Structured opening hours (e.g., schema.org format) in JSONB. Adheres to the centrally defined schema.';

COMMENT ON COLUMN public.shops\_and\_services\_details.opening\_hours\_text\_notes IS 'Human-readable summary, exceptions, or general notes about opening hours. Primary reference language (English) text. (Translatable via public.translations).';

COMMENT ON COLUMN public.shops\_and\_services\_details.opening\_hours\_last\_verified\_at IS 'When the opening hours were last checked/verified.';

COMMENT ON COLUMN public.shops\_and\_services\_details.emergency\_service\_details IS 'For services like pharmacies, details on emergency/after-hours availability or contact. Primary reference language (English) text. (Translatable via public.translations).';

COMMENT ON COLUMN public.shops\_and\_services\_details.contact\_phone\_service IS 'Specific contact phone number for this service/shop. Max 50 chars.';

COMMENT ON COLUMN public.shops\_and\_services\_details.contact\_email\_service IS 'Specific contact email for this service/shop. Validated format. Max 254 chars.';

COMMENT ON COLUMN public.shops\_and\_services\_details.website\_url\_service IS 'Specific website URL for this service/shop. Validated format. Max 2048 chars.';

COMMENT ON COLUMN public.shops\_and\_services\_details.languages\_spoken\_codes IS 'Array of ISO 639-1 language codes spoken by staff (e.g., {''it'', ''en''}). Integrity (existence in languages\_master and language is\_active\_for\_platform) enforced by DB trigger.';

COMMENT ON COLUMN public.shops\_and\_services\_details.payment\_method\_ids IS 'Array of FKs to payment\_methods\_master. Accepted payment methods. Integrity (existence and is\_active status) enforced by DB trigger.';

COMMENT ON COLUMN public.shops\_and\_services\_details.general\_price\_range\_id IS 'FK to establishment\_price\_ranges\_master. General price level if applicable (e.g., for a gear shop). Referenced master record must be is\_active=true.';

COMMENT ON COLUMN public.shops\_and\_services\_details.accessibility\_notes\_service IS 'Specific notes regarding accessibility for this shop/service. Primary reference language (English) text. (Translatable via public.translations).';

COMMENT ON COLUMN public.shops\_and\_services\_details.service\_specific\_details\_notes IS 'Other relevant details unique to this service. Primary reference language (English) text. (Translatable via public.translations).';

COMMENT ON COLUMN public.shops\_and\_services\_details.data\_last\_verified\_at IS 'Timestamp when overall details for this shop/service were last verified.';

COMMENT ON COLUMN public.shops\_and\_services\_details.created\_at IS 'Timestamp of record creation.';

COMMENT ON COLUMN public.shops\_and\_services\_details.created\_by\_profile\_id IS 'Profile ID of the user who created this record.';

COMMENT ON COLUMN public.shops\_and\_services\_details.updated\_at IS 'Timestamp of last update (auto-updated by trigger).';

COMMENT ON COLUMN public.shops\_and\_services\_details.updated\_by\_profile\_id IS 'Profile ID of the user who last updated this record.';

COMMENT ON COLUMN public.shops\_and\_services\_details.deleted\_at IS 'Timestamp for soft deletion. If NULL, record is active. Allows independent lifecycle for this detail record if a specific service closes.';

-- Linking table for Shop/Service Media (public.shop\_service\_media - Version 1.0)

CREATE TABLE IF NOT EXISTS public.shop\_service\_media (

id BIGINT GENERATED ALWAYS AS IDENTITY PRIMARY KEY,

shop\_service\_waypoint\_id BIGINT NOT NULL REFERENCES public.shops\_and\_services\_details(waypoint\_id) ON DELETE CASCADE,

media\_id UUID NOT NULL REFERENCES public.media(id) ON DELETE RESTRICT,

media\_role\_code TEXT NOT NULL REFERENCES public.media\_roles\_master(code) ON DELETE RESTRICT,

display\_order SMALLINT NOT NULL DEFAULT 0,

caption\_override TEXT NULL, -- Primary reference language (English). Translatable.

alt\_text\_override TEXT NULL, -- Primary reference language (English). Translatable.

created\_at TIMESTAMPTZ NOT NULL DEFAULT now(),

updated\_at TIMESTAMPTZ NOT NULL DEFAULT now(),

created\_by\_profile\_id UUID NULL REFERENCES public.profiles(id) ON DELETE SET NULL,

updated\_by\_profile\_id UUID NULL REFERENCES public.profiles(id) ON DELETE SET NULL,

CONSTRAINT uq\_shop\_service\_media\_role\_order UNIQUE (shop\_service\_waypoint\_id, media\_id, media\_role\_code)

);

COMMENT ON TABLE public.shop\_service\_media IS 'Links shops/services to media items for galleries or specific semantic roles. Version 1.0';

CREATE TRIGGER trigger\_shop\_service\_media\_set\_updated\_at BEFORE UPDATE ON public.shop\_service\_media FOR EACH ROW EXECUTE FUNCTION public.set\_current\_timestamp\_updated\_at();

CREATE OR REPLACE FUNCTION public.cleanup\_shop\_service\_media\_translations() RETURNS TRIGGER AS $$ BEGIN DELETE FROM public.translations WHERE table\_identifier = 'shop\_service\_media' AND row\_foreign\_key = OLD.id::TEXT; RETURN OLD; END; $$ LANGUAGE plpgsql SECURITY DEFINER;

CREATE TRIGGER trigger\_cleanup\_shop\_service\_media\_translations AFTER DELETE ON public.shop\_service\_media FOR EACH ROW EXECUTE FUNCTION public.cleanup\_shop\_service\_media\_translations();

COMMENT ON TRIGGER trigger\_cleanup\_shop\_service\_media\_translations ON public.shop\_service\_media IS 'Cleans up orphaned translations for shop\_service\_media translatable fields.';

-- Triggers & Functions for shops\_and\_services\_details

CREATE TRIGGER trigger\_shops\_services\_details\_set\_updated\_at

BEFORE UPDATE ON public.shops\_and\_services\_details FOR EACH ROW EXECUTE FUNCTION public.set\_current\_timestamp\_updated\_at();

COMMENT ON TRIGGER trigger\_shops\_services\_details\_set\_updated\_at ON public.shops\_and\_services\_details IS 'Trigger to automatically update updated\_at timestamp on row modification.';

CREATE OR REPLACE FUNCTION public.cleanup\_shops\_services\_details\_translations()

RETURNS TRIGGER AS $$ BEGIN DELETE FROM public.translations WHERE table\_identifier = 'shops\_and\_services\_details' AND row\_foreign\_key = OLD.waypoint\_id::TEXT; DELETE FROM public.translations WHERE table\_identifier = 'shop\_service\_media' AND row\_foreign\_key IN (SELECT id::TEXT FROM public.shop\_service\_media WHERE shop\_service\_waypoint\_id = OLD.waypoint\_id); RETURN OLD; END; $$ LANGUAGE plpgsql SECURITY DEFINER;

CREATE TRIGGER trigger\_cleanup\_shops\_services\_details\_translations AFTER DELETE ON public.shops\_and\_services\_details FOR EACH ROW EXECUTE FUNCTION public.cleanup\_shops\_services\_details\_translations();

COMMENT ON TRIGGER trigger\_cleanup\_shops\_services\_details\_translations ON public.shops\_and\_services\_details IS 'Cleans up orphaned translations for shops\_and\_services\_details and its linked media.';

CREATE OR REPLACE FUNCTION public.check\_shop\_service\_type\_active() RETURNS TRIGGER AS $$ DECLARE is\_type\_active BOOLEAN; BEGIN IF NEW.service\_type\_id IS NOT NULL THEN SELECT sstm.is\_active INTO is\_type\_active FROM public.shop\_service\_types\_master sstm WHERE sstm.id = NEW.service\_type\_id; IF NOT is\_type\_active THEN RAISE EXCEPTION 'Referenced shop\_service\_type\_id: % must be active.', NEW.service\_type\_id; END IF; END IF; RETURN NEW; END; $$ LANGUAGE plpgsql;

CREATE TRIGGER trigger\_check\_shop\_service\_type\_active BEFORE INSERT OR UPDATE OF service\_type\_id ON public.shops\_and\_services\_details FOR EACH ROW EXECUTE FUNCTION public.check\_shop\_service\_type\_active();

COMMENT ON TRIGGER trigger\_check\_shop\_service\_type\_active ON public.shops\_and\_services\_details IS 'Ensures the referenced service\_type\_id in shop\_service\_types\_master is active.';

CREATE OR REPLACE FUNCTION public.check\_shop\_price\_range\_active() RETURNS TRIGGER AS $$ DECLARE is\_range\_active BOOLEAN; BEGIN IF NEW.general\_price\_range\_id IS NOT NULL THEN SELECT eprm.is\_active INTO is\_range\_active FROM public.establishment\_price\_ranges\_master eprm WHERE eprm.id = NEW.general\_price\_range\_id; IF NOT is\_range\_active THEN RAISE EXCEPTION 'Referenced general\_price\_range\_id: % must be active.', NEW.general\_price\_range\_id; END IF; END IF; RETURN NEW; END; $$ LANGUAGE plpgsql;

CREATE TRIGGER trigger\_check\_shop\_price\_range\_active BEFORE INSERT OR UPDATE OF general\_price\_range\_id ON public.shops\_and\_services\_details FOR EACH ROW EXECUTE FUNCTION public.check\_shop\_price\_range\_active();

COMMENT ON TRIGGER trigger\_check\_shop\_price\_range\_active ON public.shops\_and\_services\_details IS 'Ensures the referenced general\_price\_range\_id in establishment\_price\_ranges\_master is active.';

CREATE OR REPLACE FUNCTION public.check\_shop\_languages\_spoken\_active() RETURNS TRIGGER AS $$ DECLARE lang\_code CHAR(2); is\_valid BOOLEAN; lang\_is\_active BOOLEAN; BEGIN IF NEW.languages\_spoken\_codes IS NOT NULL AND array\_length(NEW.languages\_spoken\_codes, 1) > 0 THEN FOREACH lang\_code IN ARRAY NEW.languages\_spoken\_codes LOOP SELECT EXISTS (SELECT 1 FROM public.languages\_master WHERE language\_code = lang\_code), lm.is\_active\_for\_platform INTO is\_valid, lang\_is\_active FROM public.languages\_master lm WHERE lm.language\_code = lang\_code; IF lm.language\_code IS NULL OR NOT is\_valid THEN RAISE EXCEPTION 'Invalid languages\_spoken\_codes element: % - does not exist in languages\_master.', lang\_code; END IF; IF NOT lang\_is\_active THEN RAISE EXCEPTION 'Inactive languages\_spoken\_codes element: % (language not active\_for\_platform).', lang\_code; END IF; END LOOP; END IF; RETURN NEW; END; $$ LANGUAGE plpgsql;

CREATE TRIGGER trigger\_check\_shop\_languages\_spoken\_active BEFORE INSERT OR UPDATE OF languages\_spoken\_codes ON public.shops\_and\_services\_details FOR EACH ROW EXECUTE FUNCTION public.check\_shop\_languages\_spoken\_active();

COMMENT ON TRIGGER trigger\_check\_shop\_languages\_spoken\_active ON public.shops\_and\_services\_details IS 'Ensures all languages\_spoken\_codes exist in languages\_master and are active\_for\_platform.';

CREATE OR REPLACE FUNCTION public.check\_shop\_payment\_methods\_active() RETURNS TRIGGER AS $$ DECLARE method\_id INTEGER; is\_valid BOOLEAN; method\_is\_active BOOLEAN; BEGIN IF NEW.payment\_method\_ids IS NOT NULL AND array\_length(NEW.payment\_method\_ids, 1) > 0 THEN FOREACH method\_id IN ARRAY NEW.payment\_method\_ids LOOP SELECT EXISTS (SELECT 1 FROM public.payment\_methods\_master WHERE id = method\_id), pmm.is\_active INTO is\_valid, method\_is\_active FROM public.payment\_methods\_master pmm WHERE pmm.id = method\_id; IF NOT is\_valid THEN RAISE EXCEPTION 'Invalid payment\_method\_id: % - does not exist in payment\_methods\_master.', method\_id; END IF; IF NOT method\_is\_active THEN RAISE EXCEPTION 'Inactive payment\_method\_id: %', method\_id; END IF; END LOOP; END IF; RETURN NEW; END; $$ LANGUAGE plpgsql;

CREATE TRIGGER trigger\_check\_shop\_payment\_methods\_active BEFORE INSERT OR UPDATE OF payment\_method\_ids ON public.shops\_and\_services\_details FOR EACH ROW EXECUTE FUNCTION public.check\_shop\_payment\_methods\_active();

COMMENT ON TRIGGER trigger\_check\_shop\_payment\_methods\_active ON public.shops\_and\_services\_details IS 'Ensures all payment\_method\_ids exist in payment\_methods\_master and are active.';

-- Indexes

CREATE INDEX idx\_shops\_srv\_service\_type\_id ON public.shops\_and\_services\_details(service\_type\_id);

CREATE INDEX idx\_shops\_srv\_price\_range\_id ON public.shops\_and\_services\_details(general\_price\_range\_id) WHERE general\_price\_range\_id IS NOT NULL;

CREATE INDEX idx\_shops\_srv\_payment\_method\_ids ON public.shops\_and\_services\_details USING GIN (payment\_method\_ids) WHERE payment\_method\_ids IS NOT NULL;

CREATE INDEX idx\_shops\_srv\_lang\_spoken\_codes ON public.shops\_and\_services\_details USING GIN (languages\_spoken\_codes) WHERE languages\_spoken\_codes IS NOT NULL;

CREATE INDEX idx\_shops\_srv\_deleted\_at ON public.shops\_and\_services\_details(deleted\_at) WHERE deleted\_at IS NOT NULL;

CREATE INDEX IF NOT EXISTS idx\_shops\_srv\_opening\_hours\_structured ON public.shops\_and\_services\_details USING GIN (opening\_hours\_structured) WHERE opening\_hours\_structured IS NOT NULL;

CREATE INDEX idx\_sssd\_created\_by\_profile\_id ON public.shops\_and\_services\_details(created\_by\_profile\_id) WHERE created\_by\_profile\_id IS NOT NULL;

CREATE INDEX idx\_sssd\_updated\_by\_profile\_id ON public.shops\_and\_services\_details(updated\_by\_profile\_id) WHERE updated\_by\_profile\_id IS NOT NULL;

CREATE INDEX idx\_shop\_service\_media\_ss\_waypoint\_id ON public.shop\_service\_media(shop\_service\_waypoint\_id);

-- RLS Policies

ALTER TABLE public.shops\_and\_services\_details ENABLE ROW LEVEL SECURITY;

CREATE POLICY "public\_read\_shops\_services\_details" ON public.shops\_and\_services\_details

FOR SELECT USING (

shops\_and\_services\_details.deleted\_at IS NULL AND

EXISTS (

SELECT 1 FROM public.waypoints w

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

WHERE w.id = shops\_and\_services\_details.waypoint\_id AND csm.is\_publicly\_visible = TRUE AND w.deleted\_at IS NULL

)

);

CREATE POLICY "manage\_shops\_services\_details\_for\_privileged\_users" ON public.shops\_and\_services\_details

FOR ALL USING (

(SELECT public.has\_role\_on\_profile(auth.uid(), 'platform\_admin')) OR (SELECT public.has\_role\_on\_profile(auth.uid(), 'regional\_content\_manager')) -- Consistent role names

) WITH CHECK (

(SELECT public.has\_role\_on\_profile(auth.uid(), 'platform\_admin')) OR (SELECT public.has\_role\_on\_profile(auth.uid(), 'regional\_content\_manager'))

AND (TG\_OP = 'INSERT' OR (TG\_OP = 'UPDATE' AND OLD.waypoint\_id = NEW.waypoint\_id OR (SELECT public.has\_role\_on\_profile(auth.uid(), 'platform\_admin'))))

);

-- (RLS for shop\_service\_media similar to other media linking tables, using consistent role names)

```

4\. JSON Schema Mirror (shops\_and\_services\_details)

(Reflects the schema table in Section 2; does not include denormalized \*\_label\_en columns)

JSON

```

{

"title": "shop\_service\_detail",

"description": "Stores specific details for waypoints that are shops or provide practical services to pilgrims. Includes soft delete. Version 1.3.1",

"type": "object",

"properties": {

"waypoint\_id": { "type": "integer", "format": "int64", "description": "PK, FK to waypoints.id." },

"service\_type\_id": { "type": "integer", "description": "FK to shop\_service\_types\_master. The primary type of shop or service. Referenced master must be active." },

"operator\_or\_brand\_name": { "type": ["string", "null"], "maxLength": 150, "description": "Name of the specific operator or brand. Primary reference language (English) text. (Translatable via public.translations)" },

"products\_or\_services\_summary": { "type": ["string", "null"], "description": "Brief summary of key products/services. Primary reference language (English) text. (Translatable via public.translations)" },

"is\_open\_24\_hours": { "type": "boolean", "default": false, "description": "Indicates if the service is available 24/7." },

"opening\_hours\_structured": {

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

"description": "Structured opening hours (e.g., schema.org format) in JSONB. Can be object or array of objects."

},

"opening\_hours\_text\_notes": { "type": ["string", "null"], "description": "Human-readable summary about opening hours. Primary reference language (English) text. (Translatable via public.translations)" },

"opening\_hours\_last\_verified\_at": { "type": ["string", "null"], "format": "date-time", "description": "When the opening hours were last checked/verified." },

"emergency\_service\_details": { "type": ["string", "null"], "description": "Details on emergency/after-hours availability. Primary reference language (English) text. (Translatable via public.translations)" },

"contact\_phone\_service": { "type": ["string", "null"], "maxLength": 50, "description": "Specific contact phone number for this service/shop." },

"contact\_email\_service": { "type": ["string", "null"], "format": "email", "maxLength": 254, "description": "Specific contact email for this service/shop." },

"website\_url\_service": { "type": ["string", "null"], "format": "url", "pattern": "^https?://.+", "maxLength": 2048, "description": "Specific website URL for this service/shop." },

"languages\_spoken\_codes": {

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

"items": { "type": "string", "minLength": 2, "maxLength": 2 },

"description": "Array of ISO 639-1 language codes spoken by staff. Integrity (existence in languages\_master and language is\_active\_for\_platform) enforced by DB trigger."

},

"payment\_method\_ids": {

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

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

"description": "Array of FKs to payment\_methods\_master. Accepted payment methods. Integrity (existence and is\_active status) enforced by DB trigger."

},

"general\_price\_range\_id": {

"type": ["integer", "null"],

"description": "FK to establishment\_price\_ranges\_master. General price level if applicable. Referenced master must be active."

},

"accessibility\_notes\_service": { "type": ["string", "null"], "description": "Specific notes regarding accessibility. Primary reference language (English) text. (Translatable via public.translations)" },

"service\_specific\_details\_notes": { "type": ["string", "null"], "description": "Other relevant details unique to this service. Primary reference language (English) text. (Translatable via public.translations)" },

"data\_last\_verified\_at": { "type": ["string", "null"], "format": "date-time", "description": "Timestamp when overall details were last verified." },

"created\_at": { "type": "string", "format": "date-time", "description": "Timestamp of record creation.", "readOnly": true },

"created\_by\_profile\_id": { "type": ["string", "null"], "format": "uuid", "description": "Profile ID of the creator." },

"updated\_at": { "type": "string", "format": "date-time", "description": "Timestamp of last update.", "readOnly": true },

"updated\_by\_profile\_id": { "type": ["string", "null"], "format": "uuid", "description": "Profile ID of the last updater." },

"deleted\_at": { "type": ["string", "null"], "format": "date-time", "description": "Timestamp for soft deletion. Allows independent lifecycle for this detail record.", "readOnly": true }

},

"required": ["waypoint\_id", "service\_type\_id", "is\_open\_24\_hours", "created\_at", "updated\_at"]

}

```

5\. Relationships & Integrity

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

- Foreign Keys:

- `service\_type\_id` REFERENCES `public.shop\_service\_types\_master(id)` ON DELETE RESTRICT. (Integrity: Referenced master record must have `is\_active = true`, enforced by `trigger\_check\_shop\_service\_type\_active`).

- `general\_price\_range\_id` REFERENCES `public.establishment\_price\_ranges\_master(id)` ON DELETE SET NULL. (Integrity: Referenced master record must have `is\_active = true`, enforced by `trigger\_check\_shop\_price\_range\_active`).

- Audit FKs (`created\_by\_profile\_id`, `updated\_by\_profile\_id`) to `public.profiles(id)` ON DELETE SET NULL.

- Array Foreign Keys:

- `languages\_spoken\_codes` (elements `CHAR(2)`) to `languages\_master(language\_code)`. (Integrity: Each code must exist and the language record must have `is\_active\_for\_platform = true`, enforced by `trigger\_check\_shop\_languages\_spoken\_active`).

- `payment\_method\_ids` (elements `INTEGER`) to `payment\_methods\_master(id)`. (Integrity: Each ID must exist and the master record must have `is\_active = true`, enforced by `trigger\_check\_shop\_payment\_methods\_active`).

- Linking Tables: `public.shop\_service\_media` (Version 1.0) links this table to `public.media` for managing galleries or specific media roles associated with a shop/service. Its own DDL includes audit columns, `updated\_at` trigger, and orphan translation cleanup for its translatable fields.

6\. Multilingual Strategy

- Directly Translatable Fields (Primary reference language: English, translated via `public.translations`):

- `operator\_or\_brand\_name`

- `products\_or\_services\_summary`

- `opening\_hours\_text\_notes`

- `emergency\_service\_details`

- `accessibility\_notes\_service`

- `service\_specific\_details\_notes`

- `shop\_service\_media.caption\_override` (for linked media)

- `shop\_service\_media.alt\_text\_override` (for linked media)

- Indirectly Translatable Fields (via `label` or `name` fields in referenced master tables, fetched by views/application logic):

- `service\_type\_id` (links to `shop\_service\_types\_master.label`)

- `payment\_method\_ids` (elements link to `payment\_methods\_master.label`)

- `general\_price\_range\_id` (links to `establishment\_price\_ranges\_master.label`)

- `languages\_spoken\_codes` (elements link to `languages\_master.display\_name\_en` or `display\_name\_native`)

- Orphan Cleanup: The `trigger\_cleanup\_shops\_services\_details\_translations` (`AFTER DELETE` on `shops\_and\_services\_details`) removes related entries from `public.translations` for this table and its media linking table (`shop\_service\_media`). Referenced master tables handle their own translation cleanup.

7\. Role-Based Workflow & RLS Notes

- Key Fields for Workflow: `data\_last\_verified\_at` and `opening\_hours\_last\_verified\_at` for content freshness. Audit columns for tracking. The `deleted\_at` field allows for independent soft deletion of service details. Overall visibility is also influenced by the parent `waypoints` record's status.

- RLS Policies:

- Row-Level Security is enabled on `shops\_and\_services\_details` and its media linking table.

- Public Users (`SELECT`): Can read details of shops/services if `shops\_and\_services\_details.deleted\_at IS NULL` AND the parent waypoint is published (based on `waypoints.content\_visibility\_status\_id` linking to `content\_statuses\_master.is\_publicly\_visible = TRUE`) and not soft-deleted (`waypoints.deleted\_at IS NULL`).

- Privileged Users (e.g., `platform\_admin`, `regional\_content\_manager` roles, identified via `public.has\_role\_on\_profile` helper): Have `ALL` permissions (CRUD).

- `WITH CHECK` conditions prevent non-`platform\_admin` users from re-parenting `waypoint\_id` on `UPDATE`.

- RLS policies on master tables ensure only active master records are generally readable by public roles, while `platform\_admin` users have full control.

8\. ENUM vs Lookup Discussion

- All relevant former ENUM concepts for this table's context (`shop\_service\_type\_enum`, `establishment\_price\_range\_enum`, `payment\_methods\_enum`, `languages\_enum`) are correctly handled by linking to their respective full V2-compliant master lookup tables (`shop\_service\_types\_master` (V1.2.1), `establishment\_price\_ranges\_master` (V1.1), `payment\_methods\_master` (V1.1), `languages\_master` (V2.1)). This approach provides superior structure, translatability, lifecycle management (`is\_active`), auditability, and flexibility for adding descriptive attributes like icons and categories.

9\. UI/UX Enablement

- Filtering and Identification: `service\_type\_id`, `payment\_method\_ids`, `general\_price\_range\_id`, and `languages\_spoken\_codes` (all linking to master tables with `icon\_identifier` and translatable `label`/`name` fields) are key for UI filters, map icons, and clear display names.

- Operational Status: `is\_open\_24\_hours` and `opening\_hours\_structured` (for "Open Now?" indicators and detailed schedules) are critical for pilgrim planning.

- Contact and Specifics: `contact\_phone\_service`, `contact\_email\_service`, `website\_url\_service`, `emergency\_service\_details`, `products\_or\_services\_summary`, and `service\_specific\_details\_notes` provide rich, actionable information.

- Language Support: `languages\_spoken\_codes` allows display of languages spoken at the service location, enhancing accessibility for international pilgrims.

- Media: The `shop\_service\_media` table allows for visual representation (e.g., shopfront photos, pictures of specific services offered).

10\. Key Considerations & Definitions

- `opening\_hours\_structured` (JSONB): Strict adherence to the centrally defined JSON schema is vital for consistency in data entry and reliable parsing by frontend applications.

- Array FK Validation: The database triggers for `languages\_spoken\_codes` (against `languages\_master.language\_code` and `languages\_master.is\_active\_for\_platform`) and `payment\_method\_ids` (against `payment\_methods\_master.id` and `payment\_methods\_master.is\_active`) are critical for maintaining data integrity.

- `deleted\_at` Field: This field allows a specific shop/service detail record to be soft-deleted (e.g., if a particular pharmacy at a waypoint closes down, but other services or the waypoint itself remain relevant). RLS policies for public reads must correctly filter for `shops\_and\_services\_details.deleted\_at IS NULL`, in addition to checking the status of the parent `waypoints` record. This provides more granular lifecycle management at the detail level compared to solely relying on the parent waypoint's status.

- URL Validation: The `website\_url\_service` field includes a regex (`~\* '^https?://.+'`) for basic URL format validation, ensuring data quality.

11\. Scalability & Future-Proofing

- The use of linked master tables for classifications and `JSONB` for flexible data structures like opening hours supports scalability and future additions of new service types or attributes without major schema alterations.

- Comprehensive audit columns and the `deleted\_at` field for soft deletion provide good data governance and allow for historical tracking or potential restoration of service details.

- The 1:1 relationship with `waypoints` means that any partitioning strategy implemented for `waypoints` could be extended to `shops\_and\_services\_details` if necessary.

12\. Next-Action Checklist

- 🔴 Verify Prerequisite Master Tables are V2 Compliant:

- Confirm `public.shop\_service\_types\_master` (Version 1.2.1).

- Confirm `public.payment\_methods\_master` (Version 1.1).

- Confirm `public.establishment\_price\_ranges\_master` (Version 1.1).

- Confirm `public.languages\_master` (Version 2.1).

- Ensure these tables are populated with seed data and all their triggers/RLS are active.

- Verify `public.media\_roles\_master` is populated for use by `shop\_service\_media`.

- 🔴 Implement/Update `shops\_and\_services\_details` Table: Execute the DDL for Version 1.3.1 (including updated `website\_url\_service` CHECK constraint).

- 🔴 Implement/Verify Triggers on `shops\_and\_services\_details`:

- `trigger\_shops\_services\_details\_set\_updated\_at` (for `updated\_at`).

- `trigger\_cleanup\_shops\_services\_details\_translations` (for orphan translation cleanup, including linked media).

- Active check triggers for single FKs: `trigger\_check\_shop\_service\_type\_active`, `trigger\_check\_shop\_price\_range\_active`.

- Array FK integrity triggers (checking existence and `is\_active`): `trigger\_check\_shop\_languages\_spoken\_active`, `trigger\_check\_shop\_payment\_methods\_active`.

- 🔴 Implement/Verify `shop\_service\_media` Table: Ensure its DDL (Version 1.0), triggers (`updated\_at`, orphan translation for its translatable fields: `caption\_override`, `alt\_text\_override`), indexes, and RLS policies are correctly implemented.

- 🟠 JSON Schema for `opening\_hours\_structured`: Ensure this schema is formally defined, documented, and consistently used.

- 🟠 RLS Helper Functions: Ensure `public.has\_role\_on\_profile(UUID, TEXT)` (or equivalent) is defined, secure, and functions as expected within RLS policies.

- 🟢 RLS Policies: Thoroughly test all implemented RLS policies for `shops\_and\_services\_details`, its media table, and related master tables.

- 🟢 Translation Entries & Seed Data: Prepare initial English entries in `public.translations` for all translatable fields.

- 🟢 Data Migration (if applicable): If `shops\_and\_services\_details` already contains data, ensure schema changes (like the refined URL check) are compatible or plan data cleansing.