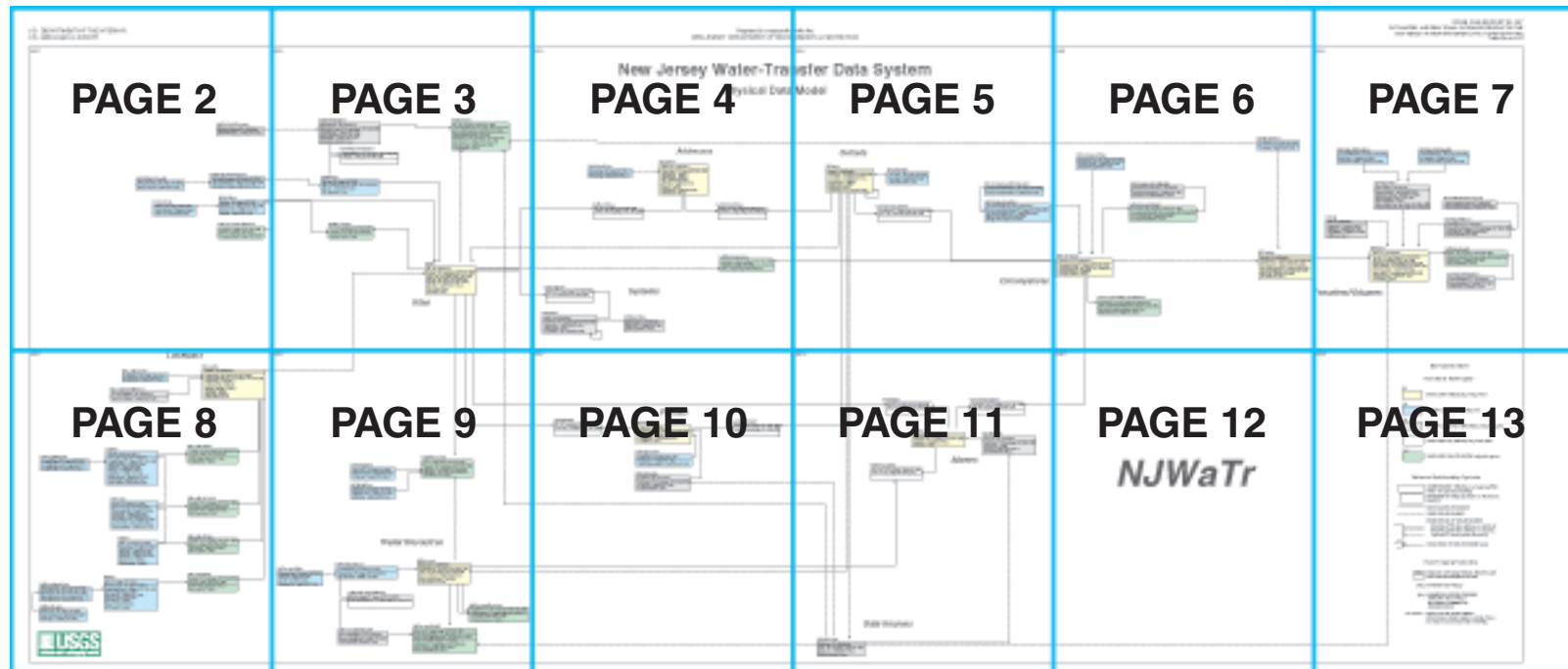


Data model and relational database design for the New Jersey Water-Transfer data system (NJWaTr) - Data-Model Diagram

by Steven Tessler

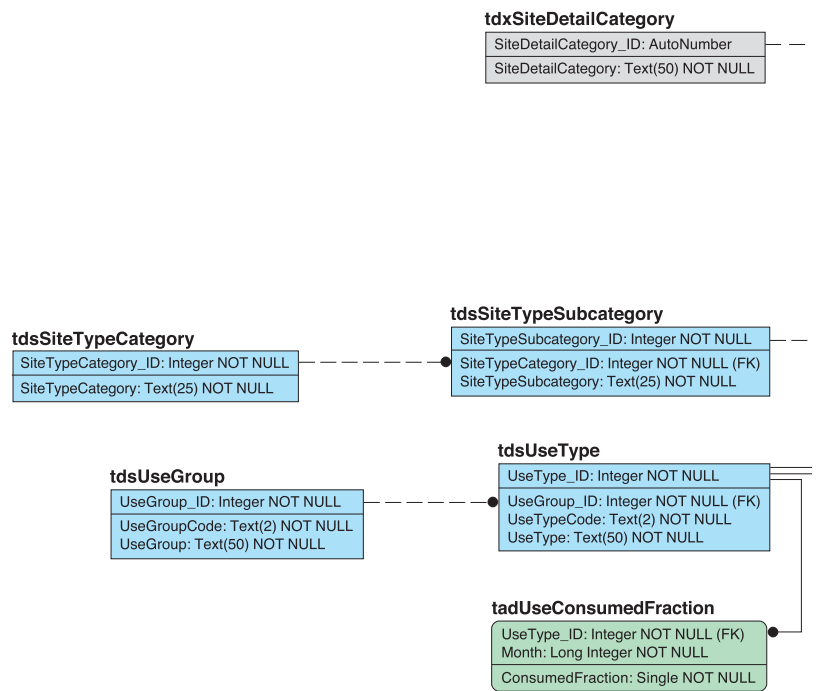
Open-File Report 03-197

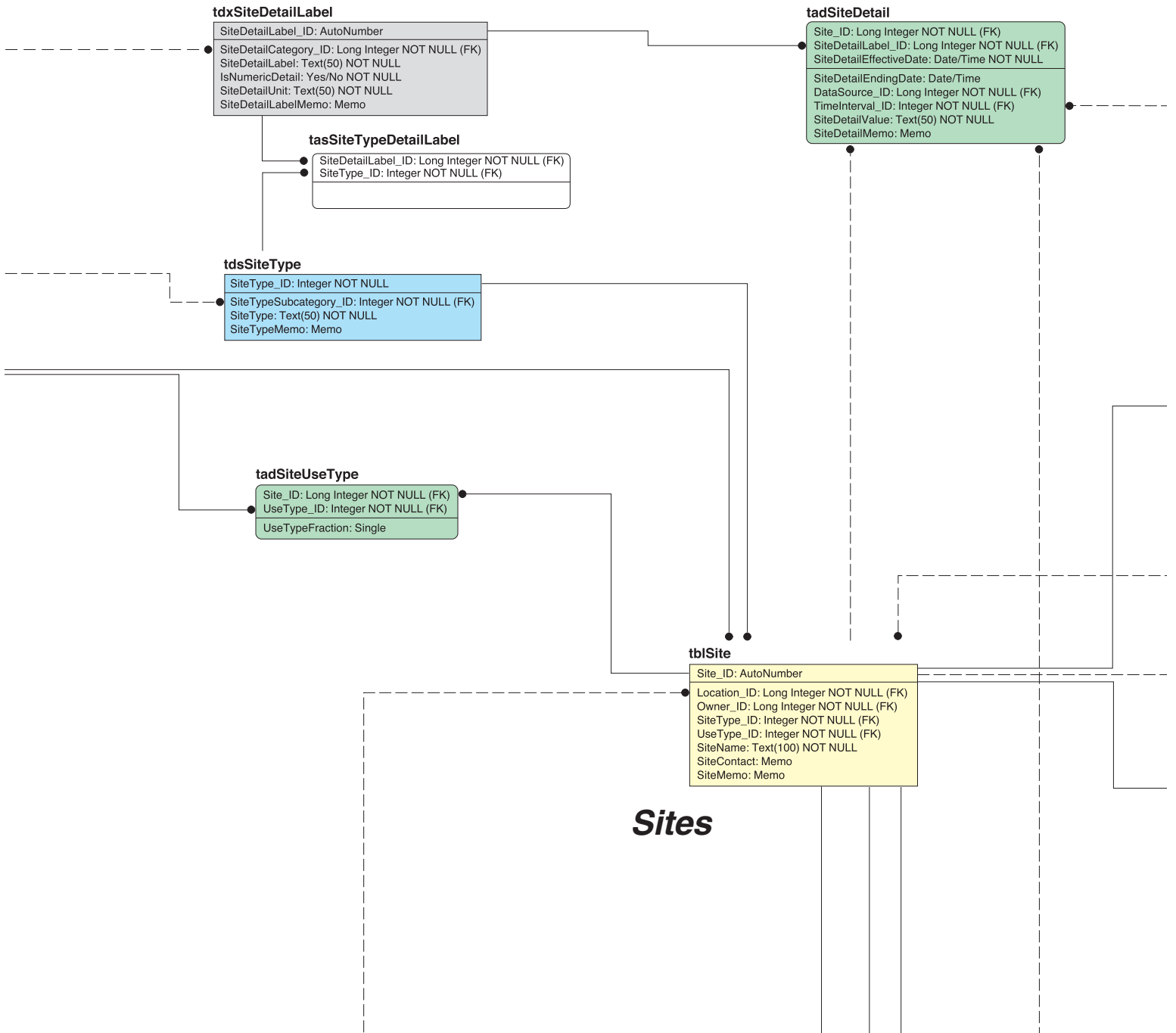


Department of the Interior
U.S. Geological Survey

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Panel 1

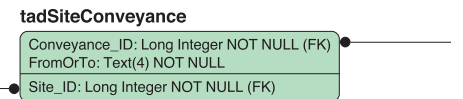
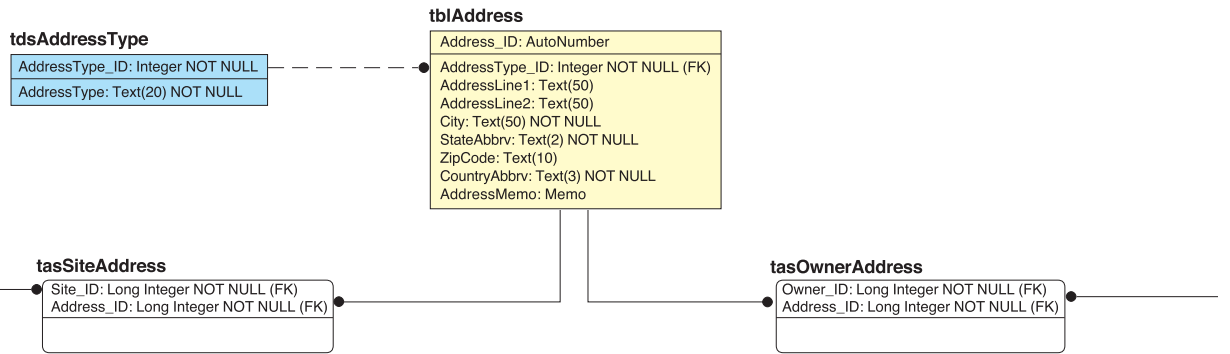




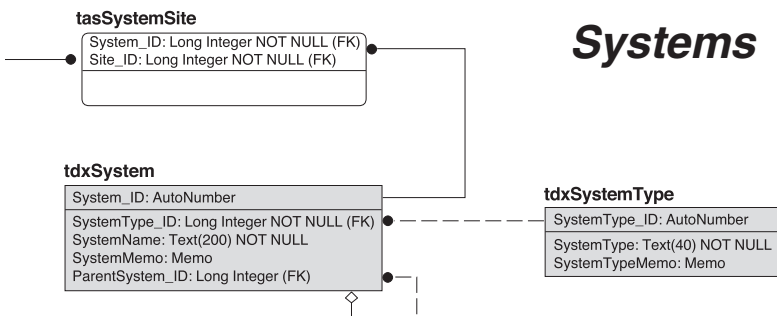
New Jersey Water-Tra

Physical Data

Addresses

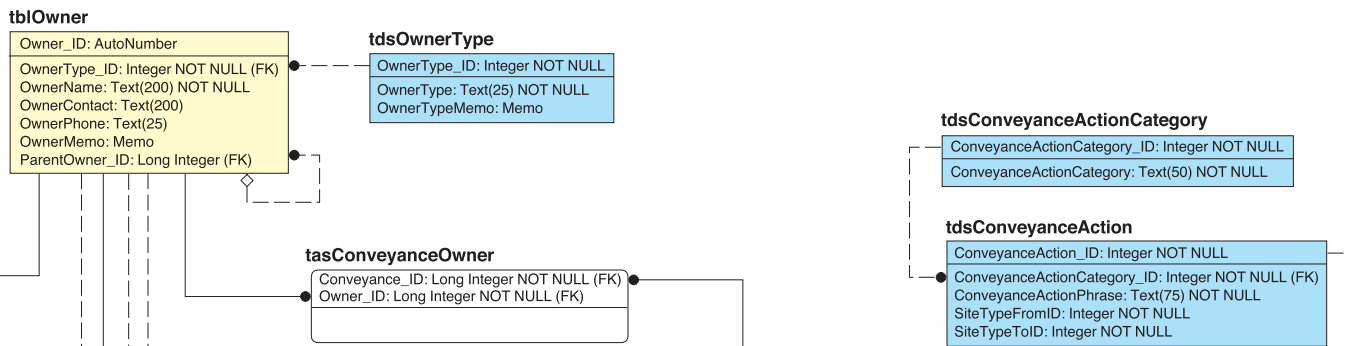


Systems

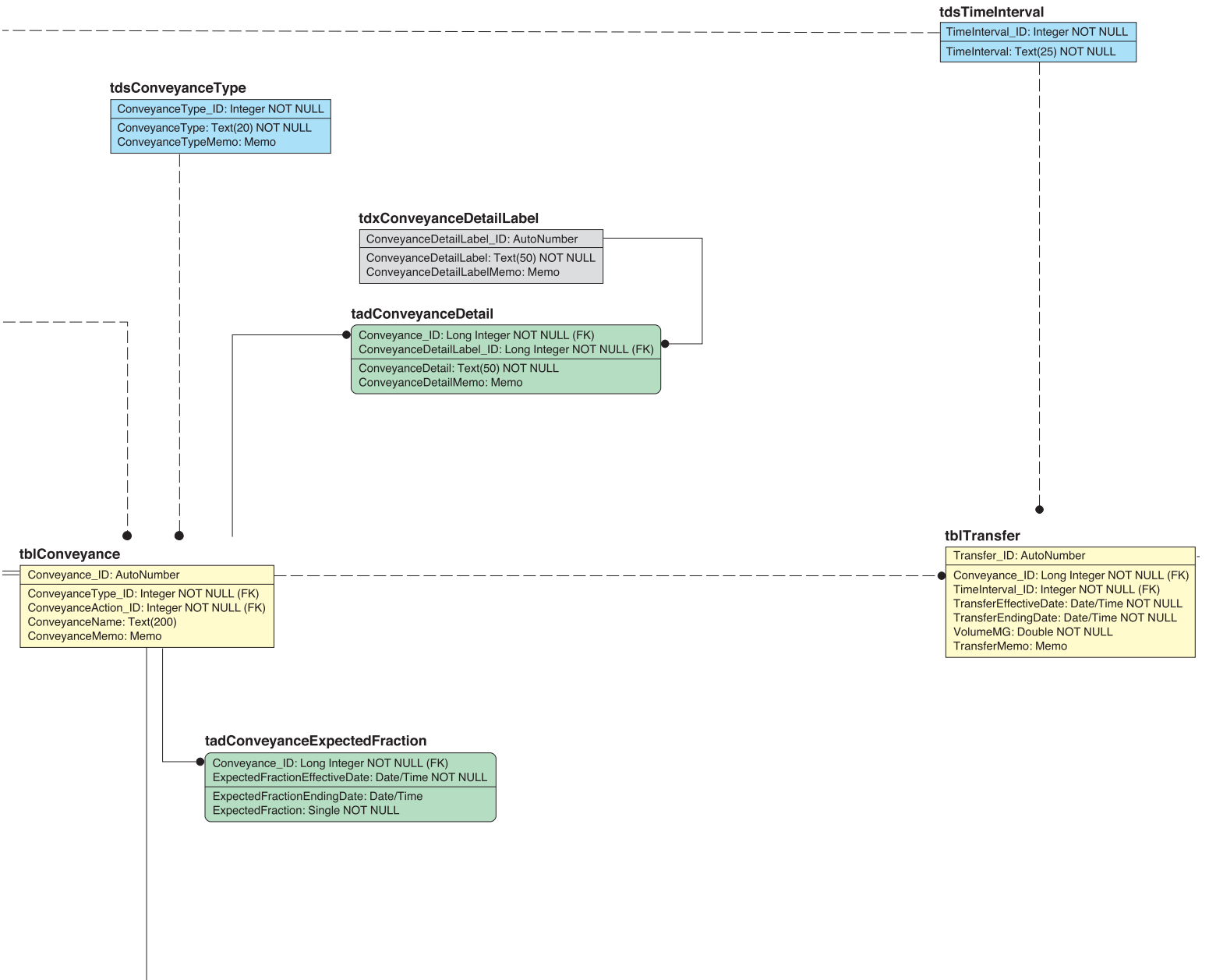


Transfer Data System Model

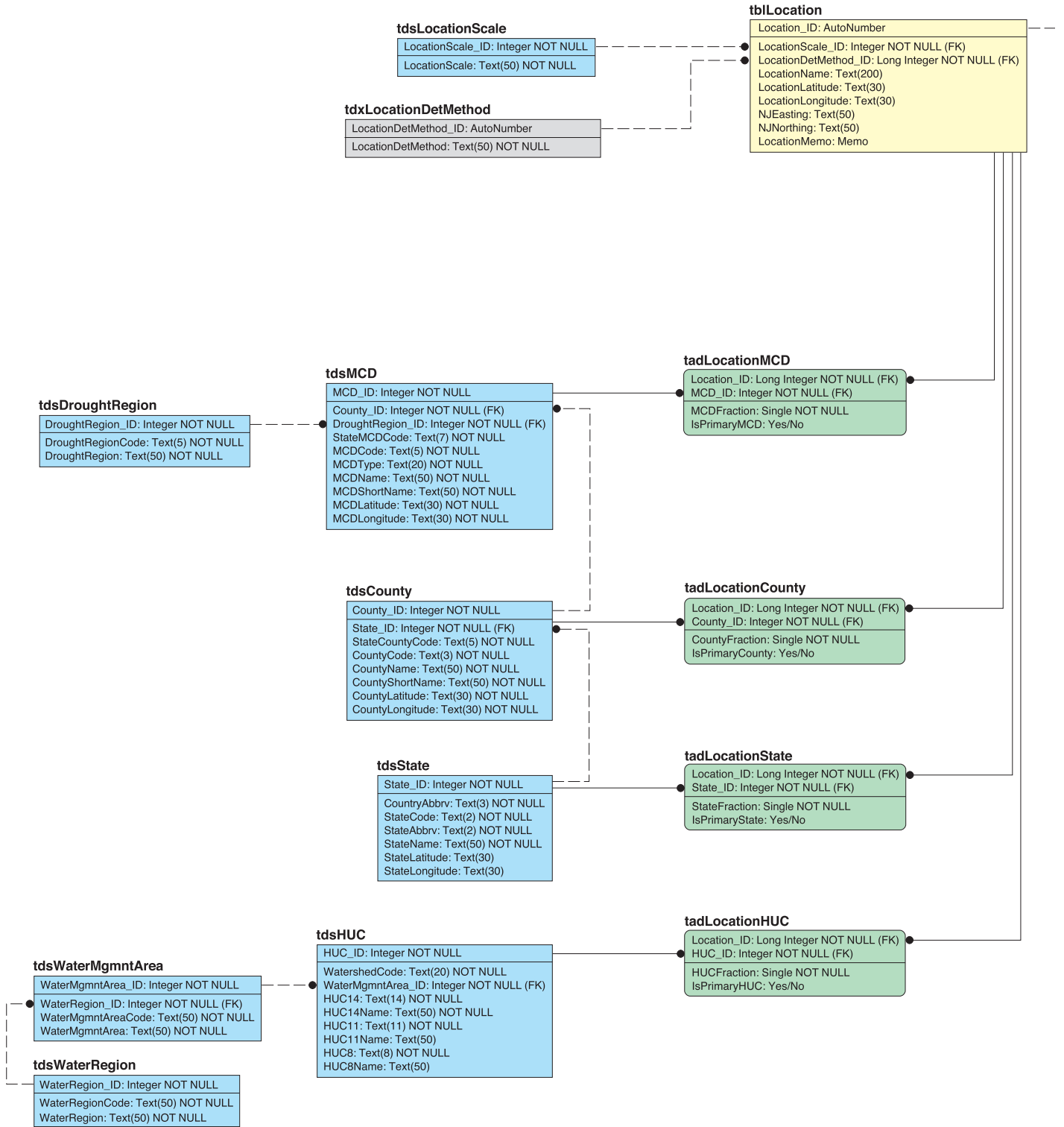
Owners



Conveyances



Locations



tdsCriticalArea

CriticalArea_ID: Integer NOT NULL
 CriticalAreaCode: Text(5) NOT NULL
 CriticalArea: Text(255) NOT NULL

tdsCriticalZone

CriticalZone_ID: Integer NOT NULL
 CriticalZoneCode: Text(5) NOT NULL
 CriticalZone: Text(255) NOT NULL

tadSiteResource

Site_ID: Long Integer NOT NULL (FK)
 Resource_ID: Long Integer NOT NULL (FK)
 CriticalArea_ID: Integer NOT NULL (FK)
 CriticalZone_ID: Integer NOT NULL (FK)
 ConnectionCount: Integer

Water Resources

tdsResourceType

ResourceType_ID: Integer NOT NULL
 GWorSW: Text(2) NOT NULL
 Salinity: Text(2) NOT NULL
 ResourceType: Text(50) NOT NULL

tdsWaterBodyType

WaterBodyType_ID: Integer NOT NULL
 ResourceType_ID: Integer NOT NULL (FK)
 WaterBodyType: Text(30) NOT NULL

tasWaterBodyDetailLabel

WaterBodyType_ID: Integer NOT NULL (FK)
 ResourceDetailLabel_ID: Long Integer NOT NULL (FK)

tdxResourceDetailLabel

ResourceDetailLabel_ID: AutoNumber
 ResourceDetailLabel: Text(50) NOT NULL
 ResourceDetailLabelMemo: Memo

tbiResource

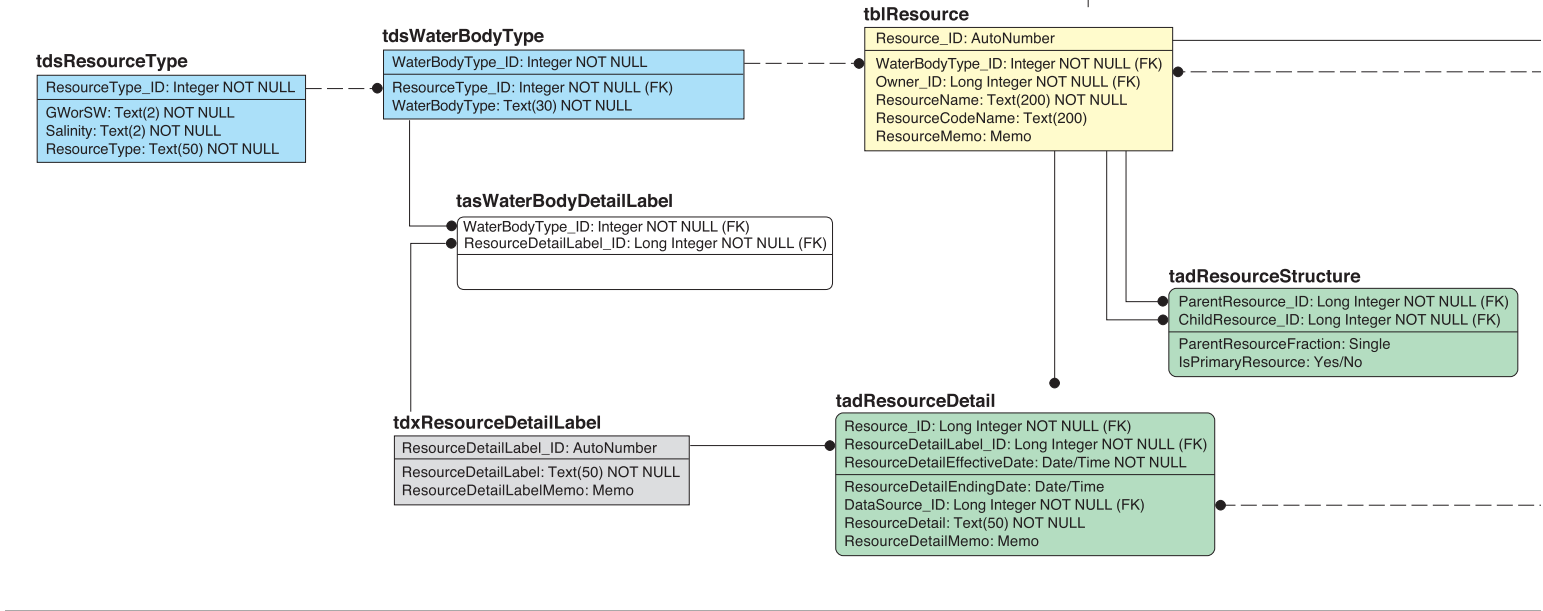
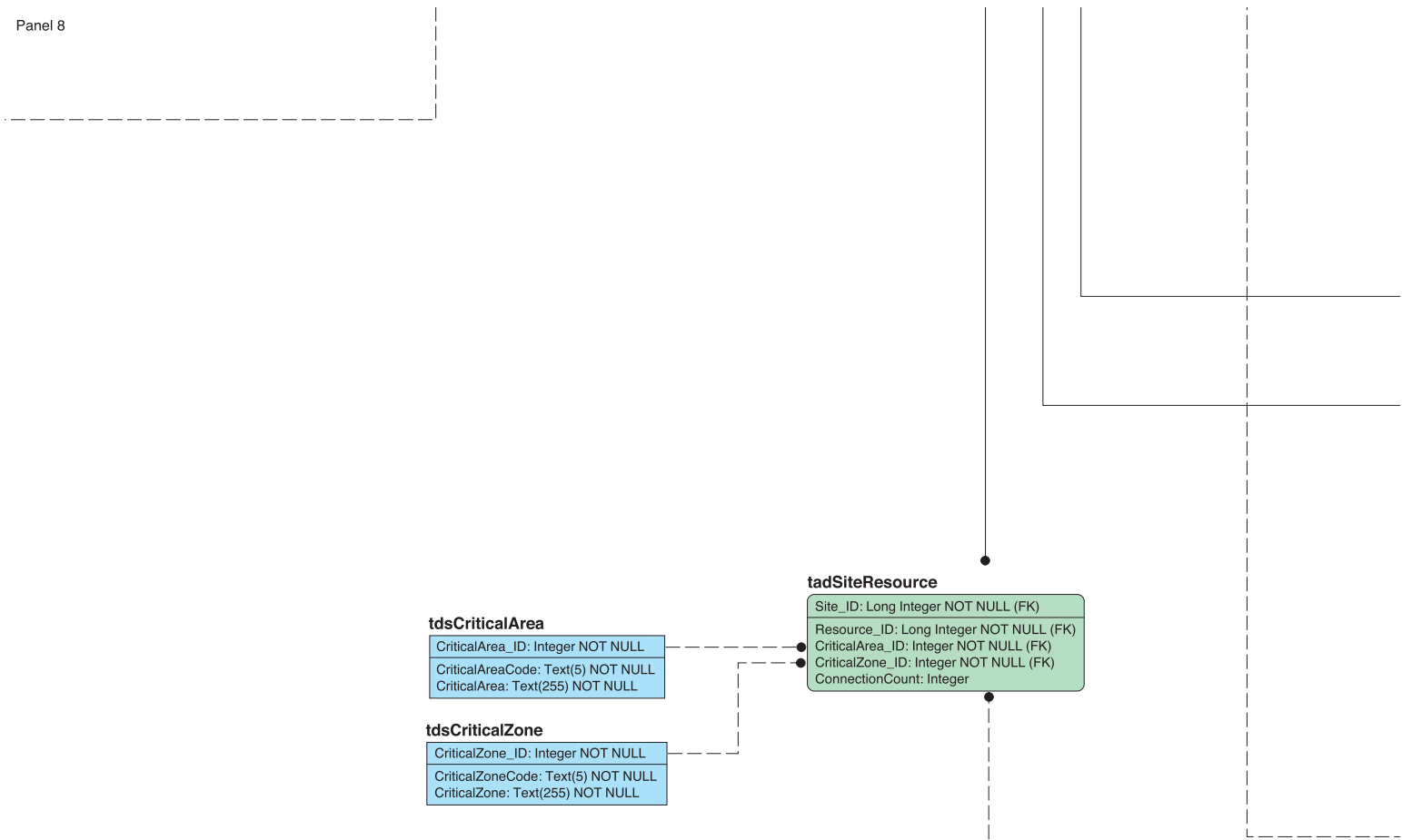
Resource_ID: AutoNumber
 WaterBodyType_ID: Integer NOT NULL (FK)
 Owner_ID: Long Integer NOT NULL (FK)
 ResourceName: Text(200) NOT NULL
 ResourceCodeName: Text(200)
 ResourceMemo: Memo

tadResourceStructure

ParentResource_ID: Long Integer NOT NULL (FK)
 ChildResource_ID: Long Integer NOT NULL (FK)
 ParentResourceFraction: Single
 IsPrimaryResource: Yes/No

tadResourceDetail

Resource_ID: Long Integer NOT NULL (FK)
 ResourceDetailLabel_ID: Long Integer NOT NULL (FK)
 ResourceDetailEffectiveDate: Date/Time NOT NULL
 ResourceDetailEndingDate: Date/Time
 DataSource_ID: Long Integer NOT NULL (FK)
 ResourceDetail: Text(50) NOT NULL
 ResourceDetailMemo: Memo



Permits

tasSitePermit

Site_ID: Long Integer NOT NULL (FK)
Permit_ID: Long Integer NOT NULL (FK)

tbiPermit

Permit_ID: AutoNumber
PermitLabel_ID: Long Integer NOT NULL (FK)
PermitSeries_ID: Integer NOT NULL (FK)
PermitNumber: Text(50) NOT NULL
PermitMemo: Memo

tdsPermitSeries

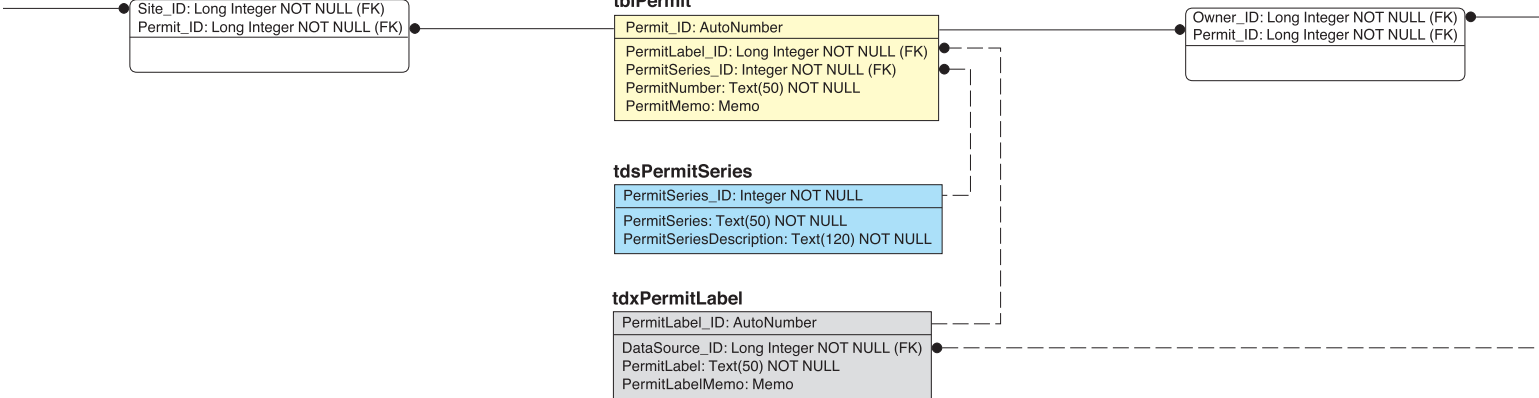
PermitSeries_ID: Integer NOT NULL
PermitSeries: Text(50) NOT NULL
PermitSeriesDescription: Text(120) NOT NULL

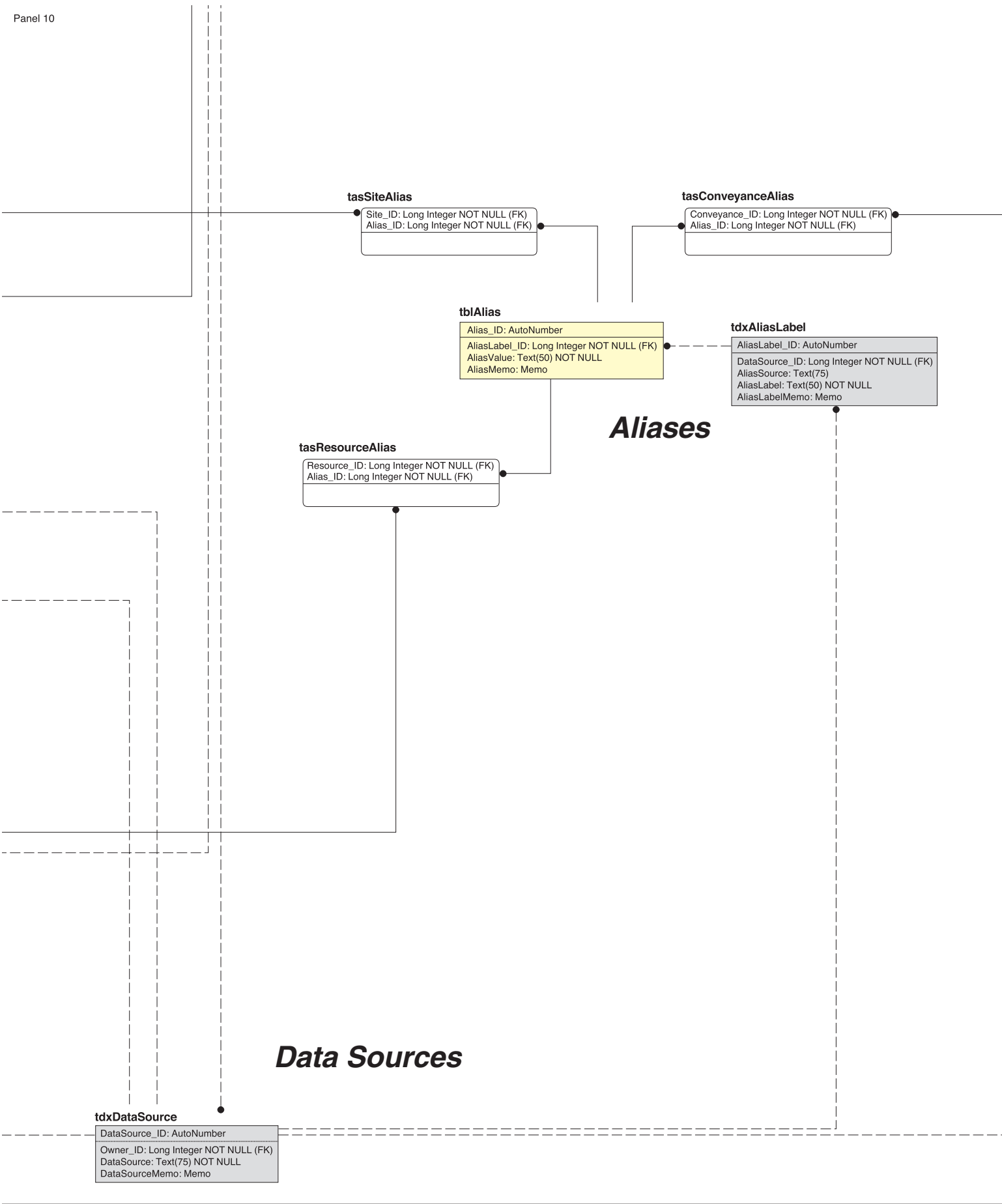
tdxPermitLabel

PermitLabel_ID: AutoNumber
DataSource_ID: Long Integer NOT NULL (FK)
PermitLabel: Text(50) NOT NULL
PermitLabelMemo: Memo

tasOwnerPermit

Owner_ID: Long Integer NOT NULL (FK)
Permit_ID: Long Integer NOT NULL (FK)





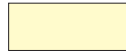
NJWaTr



EXPLANATION

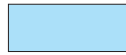
Functional Table Types

tbl



BASIC DATA TABLE; tbl prefix; yellow

tds



DOMAIN, STATIC; tds prefix; blue

tdx



DOMAIN, USER-EXTENDABLE; tdx prefix; gray

tas



ASSOCIATION, SIMPLE; tas prefix; white

tad



ASSOCIATION, WITH DATA; tad prefix; green

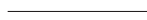
Table and Relationship Symbols



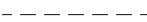
INDEPENDENT TABLE (no foreign key [FK] field in the primary key [PK])



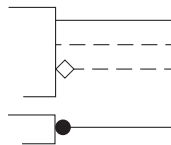
DEPENDENT TABLE (at least one FK field in the PK)



STRONG RELATIONSHIP



WEAK RELATIONSHIP



PARENT END OF RELATIONSHIP

Mandatory FK value (strong, no symbol)

Mandatory FK value (weak, no symbol)

Optional FK value (weak, diamond)

CHILD END OF RELATIONSHIP (dot)

Field Property Indicators



PRIMARY KEY (PK) FIELDS ABOVE LINE
NON-PK FIELDS BELOW LINE

(FK) FOREIGN KEY FIELD

(20) NUMBERS IN PARENTHESES
INDICATE TEXT FIELD
MAXIMUM NUMBER OF
CHARACTERS

NOT NULL FIELD VALUE IS REQUIRED
(AutoNumber fields require a unique Value
for each record and are also Not Null)