

Blida - Water & Facilities GIS Data Model

March 2018

Revision 1.0

Identity

+Blida_Id : String

GeneralFeature

+Feature_Status : CodedValue

+InstallationDate : String

Feature

+AbandonDate : String

+Subtype : CodedValue

+BitcodeZone : Integer

+Depth : Float

+Distrib_ZN : CodedString

+Admin_Area : CodedValue

+OperatedBy : CodedValue

+Sub_ORU : CodedValue

+ORU : CodedValue

Node

+Shape : Point

+Elevation : Float

+Angle : Integer

+Symbol : CodedString

+FacilityLoc_Id : String

+Facility_Id : String

+Distrib_ZN_Nr : String

+District_ZN : String

Feature

+Shape : Polygon

Feature

+Shape : Polyline

«Domain»
Feature_Status
+Active : Integer = 1
+Abandoned : Integer = 2
+Removed : Integer = 3
+Planned : Integer = 4
+Damaged : Integer = 5
+PlannedReinforcement : Integer = 6
+Proposed Replacement : Integer = 7
+Planned abandoned : Integer = 8
+Under Construction : Integer = 9

Rationing
+Shape : Polygon
+Subtype : Integer
+Ration_day : String = 1234567
+Ration_ZN_Nr : Integer
+Total_Subscribers : Integer
+Consumption_Y : Float
+Elev_HC : Float
+Elev_LC : Float
+Village_Name : String
+Vill_Nr : CodedValue
+Ration_ZN_Nr : Integer
+Valve_ID : Integer
+Total_Connections : Integer

Project
+Shape : Polyline
+Project_Name : String
+Title : String
+Contract_Nr : String
+Contractor : String
+Subtype : CodedString
+AwardedDate : String
+CompletionDate : String
+AcceptanceDate : String
+HasAsBuilt : CodedValue
+Remark : String
+Ref_Village_Nr : Integer
+Supervision : String
+Design_Consultant : String
+Handing Over date : Date
+Contract value : float
+Total VO : float
+Funding : String
+Ref_Admin_area : String
+Ref_Village_name : String
+Ref_Village_Nr : Integer

Project
+Shape : Polygon
+Project_Name : String
+Title : String
+Contract_Nr : String
+Contractor : String
+Subtype : CodedString
+AwardedDate : String
+CompletionDate : String
+AcceptanceDate : String
+HasAsBuilt : CodedValue
+Remark : String
+Ref_Village_Nr : Integer
+Supervision : String
+Design_Consultant : String
+Handing Over date : Date
+Contract value : float
+Total VO : float
+Funding : String
+Ref_Admin_area : String
+Ref_Village_name : String
+Ref_Village_Nr : Integer

Distrib_Zone
+Shape : Polygon
+Description : String
+Subtype : CodedString
+Distrib_ZN_Nr : String

District_ZN
+Shape : Polygon
+Description : String
+Subtype : CodedString
+Distrib_ZN_Nr : String

«Domain»
waterDirection
+Incoming : Integer = 1
+Outgoing : Integer = 2

WATNET
+Shape : Polyline
+Length : Float
+Node1 : String
+Node2 : String
+Diameter : Integer
+Status : CodedString
+Material : CodedValue
+Asset_ID : String
+Distrib_ZN : String
+As_built_length : Float
+Roughness : Float
+Minorloss : Float
+Result_Flow : Float
+Result_Headloss : Float
+Data_Source : CodedValue
+Direction : CodedValue
+MeasuredLength : Float
+OuterDia : Integer
+Asses_ID : String
+Distrib_ZN : String
+District_ZN : String
+Wppee_Nr : String
+Wppee_Min : String
+Contract_Nr : String
+As_built_Length : Float
+Updated_By : String
+Update_date : Date

WATNET_HIS
+Shape : Polyline
+Length : Float
+Diameter : Integer
+Status : CodedString
+Material : CodedValue
+Asset_ID : String
+Distrib_ZN : String
+As_built_length : Float
+Roughness : Float
+Minorloss : Float
+Result_Flow : Float
+Result_Headloss : Float
+Data_Source : CodedValue
+Direction : CodedValue
+MeasuredLength : Float
+OuterDia : Integer
+Asses_ID : String
+Distrib_ZN : String
+District_ZN : String
+Wppee_Nr : String
+Wppee_Min : String
+Contract_Nr : String
+As_built_Length : Float
+Updated_By : String
+Update_date : Date

Fitting
+Diameter : Integer
+Demand : Float
+Pattern : String
+Connection_Type : CodedValue
+DN1 : Integer
+DN2 : Integer
+DN3 : Integer
+HasDemand : CodedValue
+Meter_Type : CodedValue
+Asset_ID : String
+Fitting_Id : String
+Angle : float

Valve
+Diameter : Integer
+Type : String
+Minorloss : Float
+Setting : CodedString
+Accessibility : CodedValue
+Function : CodedValue
+ClockwiseToOpen : CodedValue
+CurrentlyOpen : CodedValue
+Motorized : CodedValue
+NormallyOpen : CodedValue
+Asset_Id : String
+Valve_Id : String
+Ration_ZN_Nr : String
+Angle : float
+Condition : Chamber

«Domain»
SystemValveCurrentlyOpen
+Yes : Integer = 1
+No : Integer = 2

«Domain»
SystemValveNormallyOpen
+Yes : Integer = 1
+No : Integer = 2

«Domain»
SystemValveMotorized
+Yes : Integer = 1
+No : Integer = 2

«Domain»
SystemValveSetting
+Open : String = "OPEN"
+Closed : String = "CLOSED"
+Partially Open : String = "PARTIALLYOPEN"

«Domain»
SystemValveSymbol
+Valve : String = ?

«Domain»
SystemValveClockwiseToOpen
+Yes : Integer = 1
+No : Integer = 2

«Domain»
SystemValveAccessibility
+Covered : Integer = 1
+Accessible : Integer = 2

«Domain»
SystemValveAccessibility
+Covered : Integer = 1
+Accessible : Integer = 2

«Domain»
RationingSubtype
+Rationing Zone : Integer = 4
+Service Area : Integer = 1

«Domain»
ProjectSubtype
+Extension : String = "Extension"
+Rehabilitation : String = "Rehabilitation"
+Sewer : String = "Sewer"
+pumping St. : String = "Pump St."
+WTP : String = "WTP"
+New System : String = "New Sys"
+WWTP : String = "WWTP"
+Well : String = "Well"
+Other : String

«Domain»
AssetsCategory
+LND : CodedValue = 1
+BUL : CodedString = 2
+WEL : CodedString = 3
+RET : CodedValue = 4
+STP : CodedString = 5
+WTP : CodedString = 6
+WPS : CodedString = 7
+SPS : CodedString = 8
+ELM : CodedString = 9
+VLV : CodedString = 10
+MTR : CodedString = 11
+VCL : CodedString = 12
+MSC : CodedString = 14
+CMP : CodedString = 13
+WWTP : CodedString

«Domain»
Assets
+Category : CodedString
+Remark : String
+Installation_date : Date
+Admin_area : CodedValue
+ORU : CodedValue
+Serial_Nr : Integer
+Asset_Id : String

FacilityGeneral
+AdminArea : CodedValue
+FacNameAR : String
+FacNameEN : String
+DataStatus : CodedValue
+FeatureStatus : CodedValue
+FacilityLoc_ID : String
+ORU : CodedValue
+Subtype : CodedValue
+Sub_ORU : CodedValue
+Parcel_Id : String
+Facility_Id : String

«Domain»
MaterialDomain
+Unknown : Integer = 0
+Cast Iron : Integer = 2
+PVC (Polyvinylchloride) : Integer = 3
+Asbestos Cement : Integer = 4
+Steel : Integer = 5
+PE (Polyethylene) : Integer = 6
+Galvanized Iron : Integer = 7
+Lead : Integer = 8
+Stainless Steel : Integer = 9
+Reinforcement Concrete : Integer = 10

MaterialDomain
+Unknown : Integer = 0
+Cast Iron : Integer = 2
+PVC (Polyvinylchloride) : Integer = 3
+Asbestos Cement : Integer = 4
+Steel : Integer = 5
+PE (Polyethylene) : Integer = 6
+Galvanized Iron : Integer = 7
+Lead : Integer = 8
+Stainless Steel : Integer = 9
+Reinforcement Concrete : Integer = 10

«Domain»
FittingClass
+Fitting : Integer = 1
+Meter : Integer = 2
+MeasurementPoint : Integer = 3

«Domain»
FittingSubtype
+End Cap : Integer = 101
+Reducer : Integer = 102
+Other : Integer = 103
+Other : Integer = 104
+T or Connection : Integer = 105
+Pressure Measurement Point : Integer = 1001
+Level Measurement Point : Integer = 1002
+Flow Measurement Point : Integer = 1003

«Domain»
Meter_Type
+Mechanical : Integer = 240
+Electromagnetic : Integer = 241
+Ultrasonic : Integer = 242

«Domain»
ValveSubtype
+Ball : Integer = 1
+Butterfly : Integer = 2
+Gate : Integer = 3
+Other : Integer = 4
+Washout : Integer = 5
+Air Release : Integer = 6
+Altitude : Integer = 7
+Backflow Control : Integer = 8
+Double Check : Integer = 9
+Simple Check : Integer = 10
+PRV : Integer = 11
+Float Valve : Integer = 12
+Break Pressure Valve : Integer = 13

«Domain»
SystemValveCurrentlyOpen
+Yes : Integer = 1
+No : Integer = 2

«Domain»
SystemValveNormallyOpen
+Yes : Integer = 1
+No : Integer = 2

«Domain»
SystemValveMotorized
+Yes : Integer = 1
+No : Integer = 2

«Domain»
SystemValveSetting
+Open : String = "OPEN"
+Closed : String = "CLOSED"
+Partially Open : String = "PARTIALLYOPEN"

«Domain»
SystemValveSymbol
+Valve : String = ?

«Domain»
SystemValveClockwiseToOpen
+Yes : Integer = 1
+No : Integer = 2

«Domain»
SystemValveAccessibility
+Covered : Integer = 1
+Accessible : Integer = 2

«Domain»
Reservoir
+BWL : Float
+TWL : Float
+Volume : Float
+Pattern : String
+CompartmentCount : Integer

Meter
+Pipe Diameter : Integer
+Connection : CodedValue
+Asset_ID : String
+Village_name : String
+Municipal_Name : String
+Sub_Type : String
+Meter Serial

Chamber
+shape : Polygon
+MeasureX : Float
+MeasureY : Float
+MeasureZ : Float
+Material : String
+FacilityLoc_Id : String

Hydrant
+shape : Polygon
+MeasureX : Float
+MeasureY : Float
+MeasureZ : Float
+Material : String
+FacilityLoc_Id : String

«Domain»
HydrantSubtype
+Underground : Integer = 1
+Pillar : Integer = 2

ReservoirSubtype
+Ground Reservoir : Integer = 1
+Water Tower : Integer = 2

«Domain»
MeterSubtype
+Transmission Output Meter : Integer = 1
+Transmission Input Meter : Integer = 2
+Other Meter : Integer = 3
+Transmission Meter : Integer = 4
+Domestic Meter : Integer = 5
+Import Meter : Integer = 6
+Source Meter : Integer = 7
+Export Meter : Integer = 8
+Tanker Filling Meter : Integer = 9
+Irrigation Meter : Integer = 10
+Animal Feeding Meter : Integer = 11
+Filling Meter : Integer = 12
+Real Loss Meter : Integer = 13
+Domestic Meter Box : Integer = 14
+Pilot Area Meter : Integer = 15
+TransOutputMeter_GSM : Integer = 16
+TransOutputMeter_GSM : Integer = 17

SystemValveCurrentlyOpen
+Yes : Integer = 1
+No : Integer = 2

SystemValveNormallyOpen
+Yes : Integer = 1
+No : Integer = 2

SystemValveMotorized
+Yes : Integer = 1
+No : Integer = 2

SystemValveSetting
+Open : String = "OPEN"
+Closed : String = "CLOSED"
+Partially Open : String = "PARTIALLYOPEN"

SystemValveSymbol
+Valve : String = ?

SystemValveClockwiseToOpen
+Yes : Integer = 1
+No : Integer = 2

SystemValveAccessibility
+Covered : Integer = 1
+Accessible : Integer = 2

SystemValveAccessibility
+Covered : Integer = 1
+Accessible : Integer = 2

FacilityPoint
+Shape : Point
+CostCentre : String
+Elevation : String
+Remark : String
+InstallDate : String
+ORU : CodedValue
+Subtype : CodedValue

FacilityLocCenter
+Shape : Point

PowerPole
+Shape : Point
+KVA : Integer

Facility_PT
+NumerOPumps : Integer
+PumpingCapacity : Integer

Tank
+InitialLevel : Float
+DynamicWaterLevel : Float
+StaticWaterLevel : Float
+Yield : Float
+Depth : Float
+Condition : CodedValue

WaterSource
+DynamicWaterLevel : Float
+StaticWaterLevel : Float
+Yield : Float
+Depth : Float
+Condition : CodedValue

Pump
+Properties : String
+InletDiameter : Integer
+DischargeDiameter : Integer
+CurrentFlow : Float
+CurrentPressure : Float
+StageCount : Integer
+Facility_Id : String
+Pump_Id : Integer
+Pump_debit : Integer
+Head : Integer
+Puisance en KW : Integer

ControlPanel
+RatedPower : Integer
+Condition : CodedValue
+Shape : Polygon
+Facility_Id : String

Condition
+Good : Integer = 1
+Acceptable : Integer = 2
+Poor : Integer = 3

WarehousePump
+Facility_Id : String
+Remark : String
+Manufacturer : String
+Model : String
+Phases : Integer
+RatedPower : Float
+RatePressure : Float
+InstallationDate : String
+DateManufactured : String
+SerialNumber : String
+Condition : CodedValue

WaterStructure
+Shape : Polygon
+Subtype : CodedValue
+HasCrane : CodedValue
+Material : CodedValue
+Facility_Loc_Id : String
+Facility_Id : String

Boundary
+Shape : Polyline
+BND_delineation : CodedValue
+MatrIALIZED_by : CodedValue
+BND_Condition : CodedValue

Building
+Shape : Polygon
+Building_Type : String
+Build_function : CodedValue
+structural_plans : CodedValue
+Facility_Loc_ID : String
+Facility_Id : String

Road
+Shape : Polygon
+FacilityLoc_Id : String

WaterStructureSubtype
+Steel : Integer = 1
+Concrete : Integer = 2

WaterStructureMaterial
+Steel : Integer = 1
+Concrete : Integer = 2

WaterStructureSubtype
+Ground Reservoir : Integer = 2
+Water Tower : Integer = 3

WaterStructureMaterial
+Steel : Integer = 1
+Concrete : Integer = 2

FacilityLoc
+Shape : Polygon
+BND_status : CodedValue

FacilityLocSubtype
+Well : Integer = 1
+Reservoir : Integer = 2
+Pumping Station : Integer = 3
+Reservoir and Pumping Station : Integer = 4
+Reservoir, Well and Pumping Station : Integer = 5
+Well and Reservoir : Integer = 6
+Well and Pumping Station : Integer = 7
+Water Treatment Plant : Integer = 8
+Wastewater Treatment Plant : Integer = 9
+Sewage Lifting Station : Integer = 10
+Office : Integer = 11
+Building : Integer = 12
+Raw Water Intake : Integer = 13
+Chamber : Integer = 14

FacilityLocBND_Status
+Unclear Boundary : Integer = 2
+Defined Boundary : Integer = 1

Facility_PTSubtype
+Well : Integer = 1
+Reservoir : Integer = 2
+Pumping Station : Integer = 3
+Tanker Filling Point : Integer = 4
+Water Treatment Plant : Integer = 5
+Reservoir, Well and Pumping Station : Integer = 6
+Sewage Lifting Station : Integer = 7
+Wastewater Treatment Plant : Integer = 8
+Office : Integer = 9
+Storage : Integer = 10
+Laboratory : Integer = 11
+Maintenance : Integer = 12
+Housing : Integer = 13
+Building : Integer = 14
+Water Tower : Integer = 15
+Raw Water Intake : Integer = 16
+Chamber : Integer = 17
+Chlorination Room : Integer = 18
+Control Panel : Integer = 19
+Desalination Station : Integer = 20
+Deminalisation Station : Integer = 21
+Dam : Integer = 22

TankSubtype
+SurgeTank : Integer = 1
+Sump : Integer = 2

PumpSubtype
+Centrifugal : Integer = 1
+Turbine : Integer = 2
+Submersible : Integer = 3
+Vertical : Integer = 4
+Horizontal : Integer = 5

Motor
+Facility_Id : String
+AveragePowerUsage : Float
+PeakPowerUsage : Float
+Model : String
+Phases : Integer
+RatedPower : Float
+RatePressure : Float
+InstallationDate : String
+DateManufactured : String
+SerialNumber : String
+Condition : CodedValue

WarehousePump
+Facility_Id : String
+Remark : String
+Manufacturer : String
+Model : String
+Phases : Integer
+RatedPower : Float
+RatePressure : Float
+InstallationDate : String
+DateManufactured : String
+SerialNumber : String
+Condition : CodedValue

WaterStructureSubtype
+Ground Reservoir : Integer = 2
+Water Tower : Integer = 3

WaterStructureMaterial
+Steel : Integer = 1
+Concrete : Integer = 2

WaterStructureSubtype
+Ground Reservoir : Integer = 2
+Water Tower : Integer = 3

WaterStructureMaterial
+Steel : Integer = 1
+Concrete : Integer = 2

WaterStructureSubtype
+Ground Reservoir : Integer = 2
+Water Tower : Integer = 3

WaterStructureMaterial
+Steel : Integer = 1
+Concrete : Integer = 2

WaterStructureSubtype
+Ground Reservoir : Integer = 2
+Water Tower : Integer = 3

WaterStructureMaterial
+Steel : Integer = 1
+Concrete : Integer = 2

WaterStructureSubtype
+Ground Reservoir : Integer = 2
+Water Tower : Integer = 3

WaterStructureMaterial
+Steel : Integer = 1
+Concrete : Integer = 2

FacilityLoc
+Shape : Polygon
+BND_status : CodedValue

FacilityLocSubtype
+Well : Integer = 1
+Reservoir : Integer = 2
+Pumping Station : Integer = 3
+Reservoir and Pumping Station : Integer = 4
+Reservoir, Well and Pumping Station : Integer = 5
+Well and Reservoir : Integer = 6
+Well and Pumping Station : Integer = 7
+Water Treatment Plant : Integer = 8
+Wastewater Treatment Plant : Integer = 9
+Sewage Lifting Station : Integer = 10
+Office : Integer = 11
+Building : Integer = 12
+Raw Water Intake : Integer = 13
+Chamber : Integer = 14

FacilityLocBND_Status
+Unclear Boundary : Integer = 2
+Defined Boundary : Integer = 1

Facility_PTSubtype
+Well : Integer = 1
+Reservoir : Integer = 2
+Pumping Station : Integer = 3
+Tanker Filling Point : Integer = 4
+Water Treatment Plant : Integer = 5
+Reservoir, Well and Pumping Station : Integer = 6
+Sewage Lifting Station : Integer = 7
+Wastewater Treatment Plant : Integer = 8
+Office : Integer = 9
+Storage : Integer = 10
+Laboratory : Integer = 11
+Maintenance : Integer = 12
+Housing : Integer = 13
+Building : Integer = 14
+Water Tower : Integer = 15
+Raw Water Intake : Integer = 16
+Chamber : Integer = 17
+Chlorination Room : Integer = 18
+Control Panel : Integer = 19
+Desalination Station : Integer = 20
+Deminalisation Station : Integer = 21
+Dam : Integer = 22

TankSubtype
+SurgeTank : Integer = 1
+Sump : Integer = 2

PumpSubtype
+Centrifugal : Integer = 1
+Turbine : Integer = 2
+Submersible : Integer = 3
+Vertical : Integer = 4
+Horizontal : Integer = 5

Motor
+Facility_Id : String
+AveragePowerUsage : Float
+PeakPowerUsage : Float
+Model : String
+Phases : Integer
+RatedPower : Float
+RatePressure : Float
+InstallationDate : String
+DateManufactured : String
+SerialNumber : String
+Condition : CodedValue

WarehousePump
+Facility_Id : String
+Remark : String
+Manufacturer : String
+Model : String
+Phases : Integer
+RatedPower : Float
+RatePressure : Float
+InstallationDate : String
+DateManufactured : String
+SerialNumber : String
+Condition : CodedValue

WaterStructureSubtype
+Ground Reservoir : Integer = 2
+Water Tower : Integer = 3

WaterStructureMaterial
+Steel : Integer = 1
+Concrete : Integer = 2

WaterStructureSubtype
+Ground Reservoir : Integer = 2
+Water Tower : Integer = 3

WaterStructureMaterial
+Steel : Integer = 1
+Concrete : Integer = 2

WaterStructureSubtype
+Ground Reservoir : Integer = 2
+Water Tower : Integer = 3

WaterStructureMaterial
+Steel : Integer = 1
+Concrete : Integer = 2

WaterStructureSubtype
+Ground Reservoir : Integer = 2
+Water Tower : Integer = 3

WaterStructureMaterial
+Steel : Integer = 1
+Concrete : Integer = 2

WaterStructureSubtype
+Ground Reservoir : Integer = 2
+Water Tower : Integer = 3

WaterStructureMaterial
+Steel : Integer = 1
+Concrete : Integer = 2

Other shape files for related water modelling and Operation to be added

Legend
Abstract Class : Only in Data Model
Feature Class : Spatial Data (Shapefile)
«Domain» : List of Coded Values
Class : Tabular Data (dBase)
Generalization :
Relationship :