

Appendix A: Class diagram depicting agent classes of the WaterScape model, with attributes in top box and methods in bottom box.

WaterUnit (Class SpatialEntityElement)	WaterUser (Class AgentLocation)
id pemc wma runoff origRunoff incomingWater agricultureDemand forestryDemand minesIndustryDemand ruralDemand urbanDemand ecoReserve ecoProp humanReserve ruralReserve urbanReserve waterAvailable strategy strategyType waterTransferredOut waterTransferredIn recipient1 (2,3,4) precipitation hydroIndex eisc efficiencyTime humanTime ecoTime origPemc timeStep indicator	demand sector waterAllocated waterConsumed timeStep demandExported demandImported getDemandRecipientAllWMA addDemandToWaterUser export exportDemand resetWaterUserForNextStep giveWater
allocateAllWaterPossibleToSector allocateMarketForces allocateToWaterUser allocateWaterToSector addDemand degrade evaluateIndicator flowIn flowOut getFlowRecipient moveWaterFromAvailableToEcoReserve removeWater restore replenishRunoffClimateChangeNormal resetWaterUnitForNextStep checkAndTransferTo amountToTransfer transferTo	WaterScape Message (Class Object) amountTransferred origUnmetDemand transferRecipient updatedUnmetDemand wma

CMA (Class AgentComm)
wma waterUnits allocationStrategy firstTimeStep timeStep status
adjustDemandAgricultureBase adjustDemandForestryBase adjustDemandMinesIndustryBase adjustDemandRuralBase adjustDemandUrbanBase adjustDemandAgricultureHigh adjustDemandForestryHigh adjustDemandMinesIndustryHigh adjustDemandRuralHigh adjustDemandUrbanHigh allocateCollectiveLearningEfficiency allocateCollectiveLearningEfficiencyIndicator allocateCollectiveLearningEquity allocateCollectiveLearningEquityIndicator allocateCollectiveLearningSustainability allocateCollectiveLearningSustainabilityIndicator allocateCollectiveLearningIndicator allocateFortressWorld allocateMarketForces allocateToWaterUser allWaterUnitsGetFortressWorldAllocation allWaterUnitsGetMarketForcesAllocation allWaterUnitsUsePolicyReform waterUnitsGetRandomStrategy getTransferDonor getTransferDonorNearest getTransferRecipientMaxDemand getTransferRecipientMaxUnmetDemand resetCMAForNextStep applyStrategy fortressWorldStrategy getStrategy learningStrategy marketForcesStrategy policyReformStrategy deficitAlertFortressWorld deficitAlertMarketForces deficitAlertPolicyReform recipientsSendMessageFortressWorld recipientsSendMessageLearning recipientsSendMessageMarketForces recipientsSendMessagePolicyReform transferMaxAvailable transferToNearest transferToNearestMaxAvailable