



## Channel Morphology



Original Channel Section (Compound)

## Channel Morphology




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## Channel Morphology



Levee Channel Section (Simple Trapezoid)


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## Channel Morphology



New Channel Section (Compound)

## Channel Morphology



Current Codorus Creek, north of N. George St.
Green Banks


Carroll Creek Park, Frederick


Juan Carlos Public Park, Madrid

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## Channel Morphology



## Pools, Riffles, Steps, Runs

## Channel Morphology



- Dissolved Oxygen (DO)
- Riffles / Waterfalls increase air contact
- Pools provide places for fish to rest
- DO drops as temperature increases
- Water Depth
- Canopy Shade


## Channel Morphology



Codorus Creek, Rt. 30 bridge

## Dissolved Oxygen enables life

## USACE Landscape Guidelines (ELL III 10.2 -583, 430020014)

TREES WITH LOW LIMBS OR CROWN, SUCH AS A CONIFEROUS TREE, MUST HAVE TRUNK CENTERLINE SUFFICIENTLY DISTANT FROM THE ZONE THAT NO PART OF THE TREE IS IN THE ZONE. IF THIS TREE WERE TO GROW INTO THE ZONE, IT WOULD HAVE TO BE EITHER PRUNED OR REMOVED


## 



* $15^{\prime}$ OR DISTANCE TO EDGE OF NORMAL WATER SURFACE, IF LESS **
IN THIS $4 \times$ X $T$ TRANITION ZONE, TEMPORARY OBSTRUCTION BY LIMBS AND CROWN
ISALIOWED DURING DEVELOPMENT OF NEW PLANTINGS, FOR UPTO 10 YEARS
$\nabla$ NORMAL WATER SURFACE

NOTE: THE HORIZONTAL DIMENSION OF THE MINIMUM VEGETATION-FREE ZONE SHALL BE THE GREATER OF:
(A) THE 15-FOOT MINIMUM, AS DIMENSIONED ABOVE GRADE; OR (B) AS DIMENSIONED FROM THE BELOW-GRADE STRUCTURE

Figure A-17. Inverted-T Type Floodwall with Drain

## Plant Palettes

Trees


Ornamentals

Grass


Wetland

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## Plant Palettes (Trees)



Platanus occidentalis (Sycamore)

pH buchart horn
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## Plant Palettes (Grass)




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## Plant Palettes (Grass)



Festuca sp. (Fine Fescue)


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## Waterway Concept



Susquehanna River, Sunbury

Water access

- along full channel length with reduced slopes (goal) or ...
- at controlled locations

Create Waterway trail for canoes and kayaks

- Create access points for canoes/kayaks
- Create riffles and other features to improve experience for waterway users

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## Waterway Concept



Tanner Springs Park, Portland


Susquehanna River Park, Sunbury
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## Waterway Concept



Susquehanna River Park, Sunbury


La Lira Pedestrian Bridge, Ripoll Spain

Create functional / artistic / educational nodes along the channel to facilitate and enhance experience

- North Bend Opportunity Area
- New Thackston Park

Create a signature architectural feature that will be readily recognizable as York

- Pedestrian bridge or ...
- Fountain or ...


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