Bear Creek Watershed Association
Bear Creek Watershed 101

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July 22, 2015
9:00 a.m. – 2:00 p.m.

General Syllabus

Part I – Introduction to Watershed Management
- Introductions
- PowerPoint *Laying the Watershed Foundation* (Overview only)

Part II – Quick Look at Only 3 out of More than 30 Major Watershed Topics (Overview only)
- PowerPoint/ Discussion/ Questions *Basics of Wastewater Treatment in Bear Creek Watershed*
- PowerPoint/ Discussion/ Questions *Bugs and Fishery in Bear Creek Watershed*
- PowerPoint/ Discussion/Questions *Urban Design and BMPs*

Part III – Framing Issues and Concerns (All)
- Worksheet – *The Good, the Bad, and the Ugly in Watershed* (What to leave, allow and what to fix?)

Part IV –Site Visit to Bear Creek
- On walk - Monitoring Purpose, what to monitor, schedule, implementation, cost, data management
- Taking Measurements – Introduction to sampling
- Field sampling equipment
- ME03 Field Flow Estimation Method
- ME05 Periphyton Field Estimation Method
- ME06 Water Clarity Estimation Method
- ME01 Embeddedness Field Estimation Method
- FI01 BCWA Habitat Indices Form
- FI02 BCWA Physical Stream Indices Form

Part V- Monitoring (All)
- Open discussion on data

Part I - Laying the Watershed Foundation

1) What is a Watershed
   a) Hydrology – River/ Stream orders
   b) Other Features
   c) How to decide on the "right" boundaries
   d) What defines the Bear Creek Watershed
2) Urban Hydrology
   a) Changed land use patterns
   b) Assigned beneficial uses
   c) Standards and classifications
   d) Stormwater runoff
   e) Nonpoint sources
   f) Point sources
   g) Septic systems
3) Urban Pollution
   a) Types and sources
      i) Chemical
      ii) Physical
      iii) Biological
   b) Erosion is problem
   c) Impacts to the environment – land and water
4) Basics of Western Water Rights
   a) First in Time
   b) Why no good link between quality and quantity
5) Introduction to Bear Creek Watershed Management
   a) Who, What and How
   b) Bear Creek Association
   c) Bear Creek Control Regulation
      i) Role of Regulators
      ii) Role of Dischargers
      iii) Land Use Decision Makers
      iv) Citizens
      v) Other Regulations
         (1) Regulation #38
         (2) Regulation #85
         (3) Basic Standards
   d) Bear Creek Association Watershed Monitoring
      i) Made a plan
      ii) Things to look at, measure and ignore
         (1) Point Sources
         (2) Non-point Sources
         (3) Stormwater
      iii) Data collection and management
      iv) Making sense of it all
         (1) Data management
         (2) Date application
         (3) Danger of data

Part II –
Basics of Wastewater Treatment in Bear Creek Watershed

1) Question what they know
2) What is wastewater treatment
   a) Purpose
   b) Types in Bear Creek Watershed
   c) Processes
   d) Collection systems
3) Permits
   a) What is in a permit
   b) Nutrient management
   c) Stream compliance

Bugs and Fishery in Bear Creek Watershed

1) Bear Creek Fishery
   a) Types
   b) Quality
   c) Concerns
   d) Management
2) Macroinvertebrates
   a) Bugs are the new measure of stream health
   b) What bugs are found in the watershed

Urban Design and BMPs

1) Basics of Urban Design (Kim)
2) What are Best Management Practices
   a) Erosion control
   b) Pollutant reduction
   c) Categories of BMPs Urban, Construction, Agricultural, Mining, Hydromodification
   d) Structural and non-structural practices
3) What BMPs make sense for Bear Creek Watershed
   a) List a few that are in use (e.g. 4-step process)
   b) Coyote Gulch Case Study
   c) Examples of BMPs
4) Who is responsible for implementation

Part III Handout Problems and Possible Solutions

The Good, the Bad, and the Ugly in Lower Bear Creek Watershed

Your Watershed Concerns (Before we take Walk)		
Good Environmental Or Water Quality Things You've Seen In Lower BC	**Things That Look Wrong To You, But Not Sure If They Are A Problem**	**Things That You Are Sure Is A Watershed/ Quality Problem**
1.	1.	1.
2.	2.	2.
3.	3.	3.
4.	4.	4.
5.	5.	5.
Site-Specific At Bear Creek		
Good Things You've Seen	**Things that look Wrong**	**Things that are a Problem**
1.	1.	1.
2.	2.	2.
3.	3.	3.
Possible Solutions, Fixes and things to Just Leave Alone (At Return)		
Types of Solutions	**Fixes you want to work on**	**Things you want to monitor**
1.	1.	1.
2.	2.	2.
3.	3.	3.
4.	4.	4.
Other Possible Watershed Projects		
1.		
2.		
3.		
4.		