

SURFACE DRAINAGE STUDIES

Input - Output Data & Design Aids

<u>INPUT</u>		<u>SOURCE</u>		
	Data Drainage Area	USGS Quadrangles, Aerial Photo or other sources		
	Land Use	"	"	"
Watershed	Watershed Steepness	"	"	"
Information	Soils, Types	"	"	"
	Covers	"	"	"
Climate	Rainfall Intensity	Weather Charts		
Information	Storm Frequency	Design Criteria		
Limiting Design	Allowable High Water	Local Records		
Factors	Gradeline Control	Design Criteria		
	Description of Existing	Records		
Existing	Str. & O. Section			
Facilities	High Water of Exist.	Local Records		
	Structure			
<u>OUTPUT</u>		<u>SOURCE</u>		
	Data			
Design	Design	Design computations applying the		
Discharge	Discharge	input to pertinent charts, etc.		
Proposed	Type	Design Criteria		
Facilities	Size	Design Computations		
Drainage Easements	Size	R/W Manual		
	Location	Design Computations		
Cost	Cost, including	Design Computations		
	Channel changes and			
	other related items			
<u>DESIGN AIDS</u>		<u>SOURCE (FILES)</u>		
	Data			
	Rational Method	Facilities Development Manual		
Estimating	N.R.C.S. Methods - TR55 *	"	"	"
Run-Off	USGS Flood Frequency	"	"	"
	Equations for Wisconsin	"	"	"
	Gaging Station	U.S.G.S		
	Published Watershed Studies	Regional Planning Agencies, U.S. C.O.E., U.S. N.R.C.S., U.S.G.S., etc.		
	Culvert Capacity	FHWA Hydraulic Engineering Circular		
	Inlet Control	"	"	"
Structure	Outlet Control	"	"	"
Design	Critical Depth	"	"	"
	Headwater Depth	"	"	"
* NRCS is Natural Resources Conservation Service, the new name for the Soil Conservation Service (SCS)				

<u>COMPUTER REFERENCES</u>		
Public Domain Software	TR55	P.C. program that mirror procedures in Urban Hydrology for Small Watershed Technical Release 55, June 1986
	Hydrain * HYDRA	Storm/sanitary sewers
	WSPRO	Step backwater and bridge hydraulics
	HYDRO	IDF curves, hyetographs, peak flows
	HYCLV	Culvert analysis and Design
HEC-15		HYCHL Lining stability - based on HEC-11 and
on		HY8 Culvert system performance - based HDS-5, HEC-14, HEC-19
	NFF	U.S.G.S. National Flood Frequency Model
	HYEQT	Analyze user supplied Equations
* This software package is available from Mctrans which is at the University of Florida.		
Telephone: 1-(352)-392-0378 email: uftrc@ce.ufl.edu web site: http://mctrans.ce.ufl.edu/		

