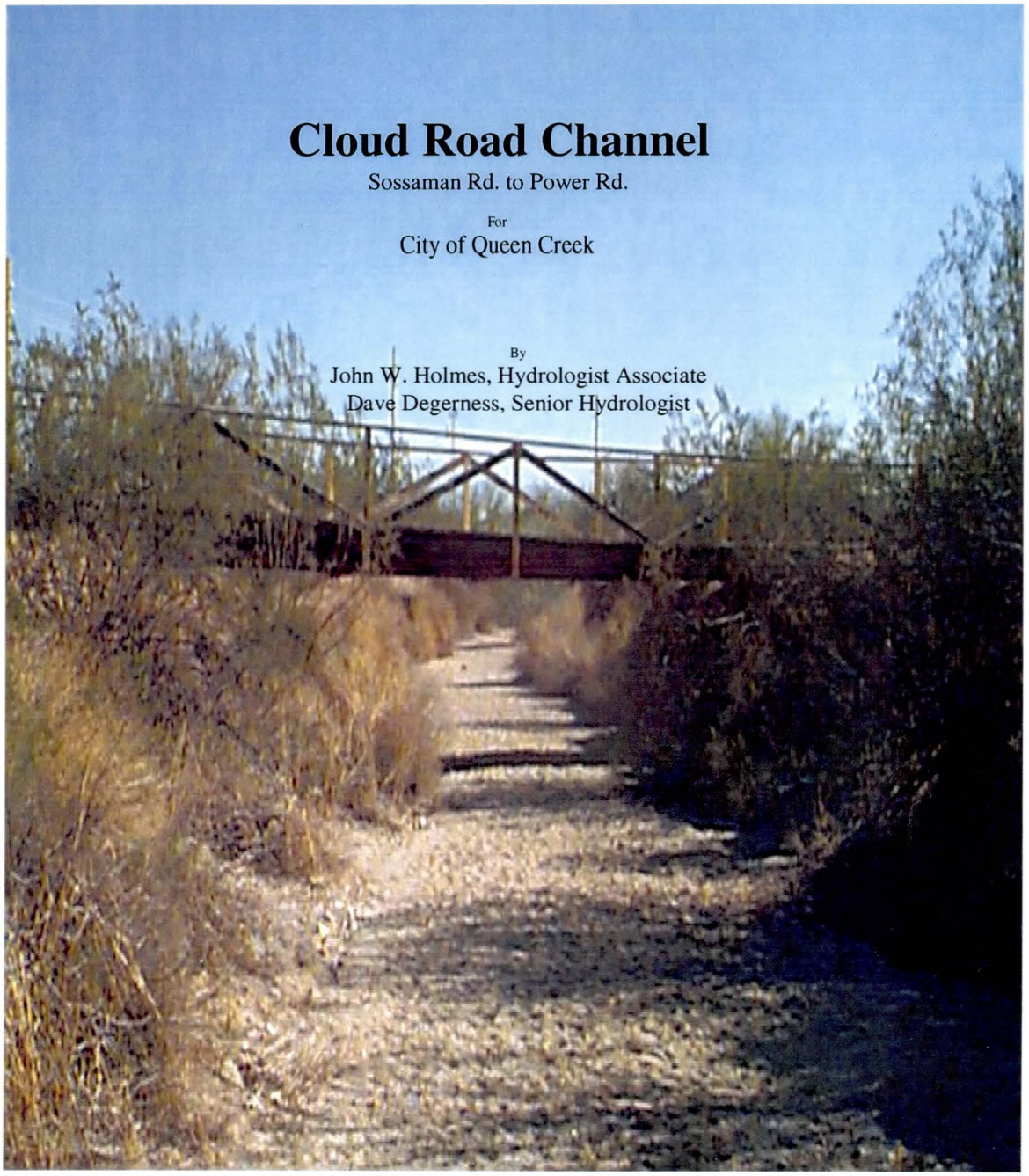
Flood Control District of Maricopa County

Report of the Hydrologic Analysis



Cloud Road Channel

Sossaman Rd. to Power Rd.

For

City of Queen Creek

By

John W. Holmes, Hydrologist Associate

Dave Degerness, Senior Hydrologist

Photo of Box Canyon Wash, by Dave Degerness

March 6, 2002

FLOOD CONTROL DISTRICT
of
Maricopa County

2801 West Durango Street • Phoenix, Arizona 85009-6399
Telephone (602) 506-1501
Fax (602) 506-4601
TT (602) 506-5897

March 6, 2002

Mr. Dick Schaner, P.E.
Town Engineer
22350 S. Ellsworth Rd.
Queen Creek, AZ. 85242

Subject: Hydrologic Analysis of the Cloud Road Channel

Dear Mr. Schaner,

The Flood Control District of Maricopa County has completed the requested analysis for the above referenced subject. The results of our analysis revealed that for the 100yr-24hour event, flows remained the same for the 2 scenarios modeled compared against the Entellus work. The original Entellus HEC-1 model had a flow rate of 1121 cfs at the intersection of Cloud Road and Sossaman Road. Scenario #1 had a flow of 959 cfs and Scenario #2 had a flow of 963 cfs. Table #1 indicates the various flow rates for each of the scenarios and at several locations along Cloud Road.

Scenario #1, the berm failure scenario, entailed sending all the runoff generated from subbasin C and subbasin A towards the north at the intersection of Cloud Road and Power Road. This scenario assumed that Box Canyon Wash could not contain any of the flows from the south. Scenario #2, the berm in place scenario, provided for a containment of 50 cfs from the apex of the wash to cross section 31+00 and 200 cfs for the remainder of the wash downstream. Capacities were estimated using digitized cross sections provided by Sunrise Engineering and modeled hydraulically within HEC-RAS. Both scenarios had flow produced by subbasin B flowing west along Hunt Highway, out of the Cloud Road drainage system. Exhibits #1 and #2 depict each modeled scenario.

Table 1.

	Flows (cfs)	
Scenario	CP-C6	CP-W6
Entellus	1121	765
Scenario 1	959	1070
Scenario 2	963	961

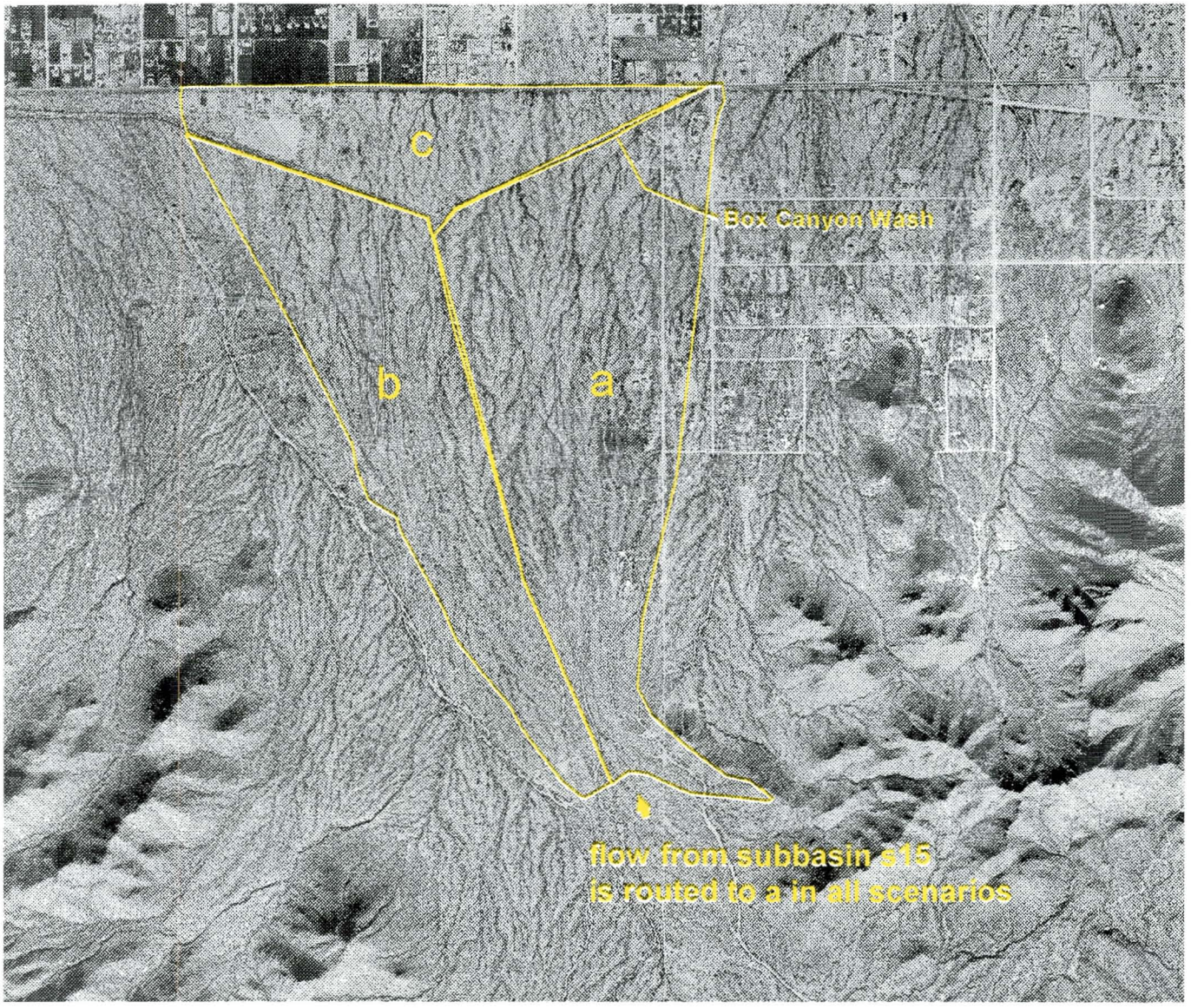
Should you need to discuss this analysis in further detail, or require any additional information, please feel free to contact me at 602-506-4730.

Sincerely,

David J. Degerness

David J. Degerness
Senior Hydrologist

Scenario #1



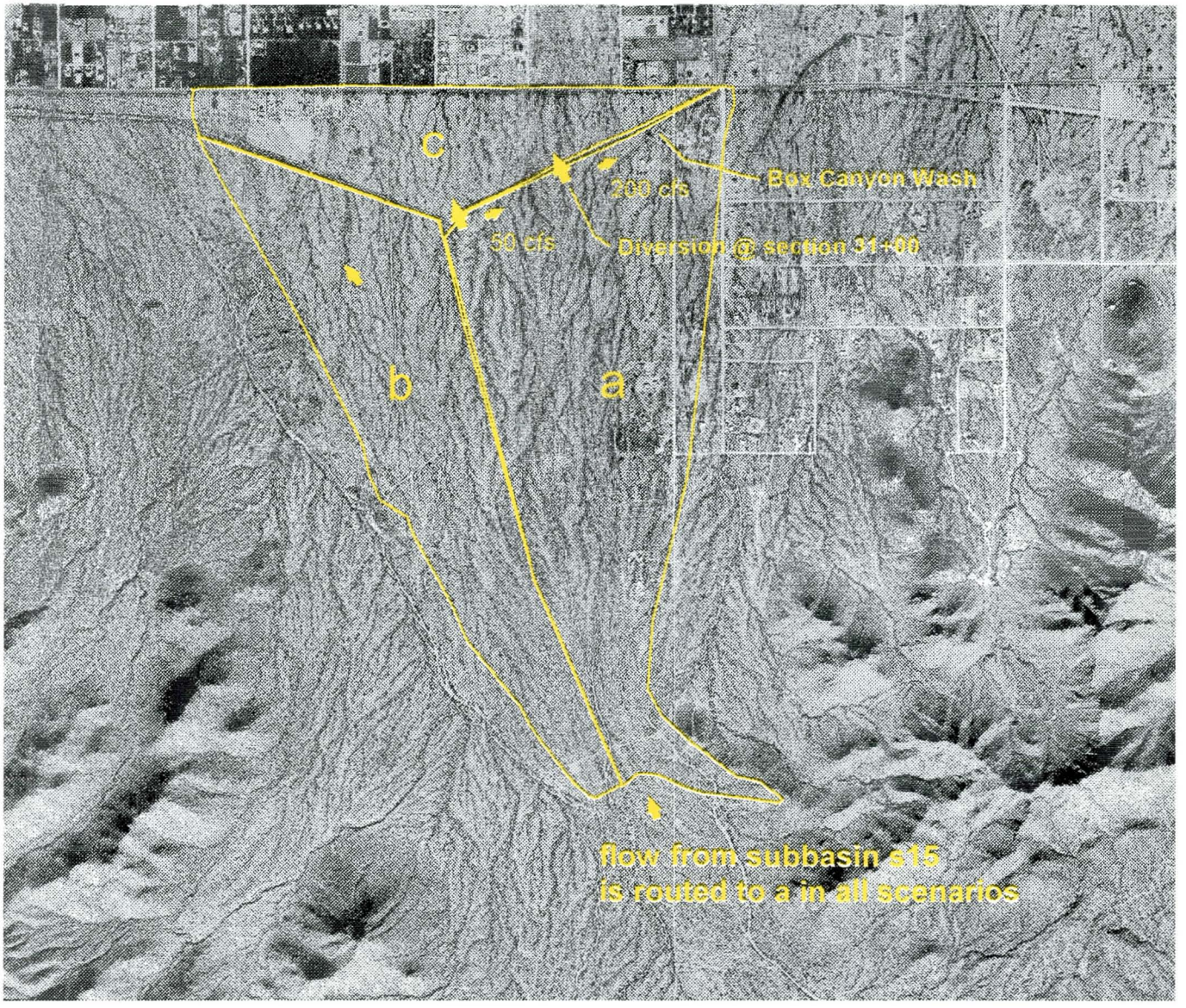
Details: All flow from subbasin a flows to subbasin c crossing Hunt Hwy and continuing north. Flows from subbasin b leave the system via Hunt Hwy.

Arrow indicates flow direction

N

Exhibit 1

Scenario #2



Details: 50 cfs flow dirversion occurs at apex of wash, with 50 cfs flowing down Box Canyon and remainder flowing to subbasin c. At section 31+00, 200 cfs diversion occurs, with 200 cfs flowing down wash and remainder flowing to subbasin c.

▲ Arrow indicates flow direction

N

Exhibit 2