

Quaternary Fault and Fold Database of the United States

As of January 12, 2017, the USGS maintains a limited number of metadata fields that characterize the Quaternary faults and folds of the United States. For the most up-to-date information, please refer to the [interactive fault map](#).

Main Street fault zone (Class A) No. 1002

Last Review Date: 1997-04-18

Compiled in cooperation with the Arizona Geological Survey

citation for this record: Pearthree, P.A., compiler, 1997, Fault number 1002, Main Street fault zone, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, <https://earthquakes.usgs.gov/hazards/qfaults>, accessed 12/14/2020 02:19 PM.

Synopsis

The Main Street fault zone, located west of the Hurricane fault on the Shivwitz Plateau, includes a narrow, shallow graben, a long, down-to-the-west, normal fault, and other related faults. Paleozoic rocks are displaced between 25 and 50 m on the western graben fault, and 50 to 110 m on the eastern graben fault. The eastern fault continues north of the graben, where a Tertiary basalt is displaced 50 to 75 m, and south of the graben, where displacement of Paleozoic rock is about 60 to 80 m and displacement of Pliocene-Quaternary basalt is 6 to 12 m. Fault escarpments formed on Paleozoic bedrock are moderately steep and linear, with extensive young fan deposition at the base of the escarpment. Upper Pleistocene to Holocene fan deposits are

	<p>faulted in a few places, but the amount of displacement is unknown. Younger Holocene fan deposits are not faulted.</p>
<p>Name comments</p>	<p>Mapped and named the "Main Street fault" by Hamblin and Best (1970 #2070), but later remapped and subdivided into the "Main Street graben" (central part), "Mt. Dellenbaugh" (southernmost part), "Poverty Knoll" (southern part), and "Seegmuller Mtn" (northern part) segments by Menges and Pearthree (1983 #2073). No detailed work has been done to justify this level of differentiation, so these "segments" are regrouped in this summary. The geology of most of the fault zone was mapped by Billingsley (1992 #2072; 1993 #2075; 1993 #2076).</p>
<p>County(s) and State(s)</p>	<p>MOHAVE COUNTY, ARIZONA</p>
<p>Physiographic province(s)</p>	<p>COLORADO PLATEAUS</p>
<p>Reliability of location</p>	<p>Good Compiled at 1:250,000 scale.</p> <p><i>Comments:</i> Most of the fault zone is mapped 1:24,000; the traces were transferred to 1:250,000-scale topographic base map for digitization.</p>
<p>Geologic setting</p>	<p>The Main Street fault zone includes a narrow, shallow graben and a down-to-the-west normal fault located west of the Hurricane fault [998] on the Shivwitz Plateau. Paleozoic rocks are displaced between 25 and 50 m on the western graben fault, and 50 to 110 m on the eastern graben fault. The eastern fault continues north of the graben, where a Tertiary basalt is displaced 50 to 75 m, and south of the graben, where displacement of Paleozoic rocks is about 60 to 80 m. Along the southernmost part of the fault zone, Pliocene-Quaternary basalt flows are displaced 6 to 12 m, and upper Pleistocene to Holocene fan deposits are faulted in a few places along the central part of the fault zone.</p>
<p>Length (km)</p>	<p>87 km.</p>
<p>Average strike</p>	<p>N4°E</p>
<p>Sense of movement</p>	<p>Normal</p> <p><i>Comments:</i> Inferred from topography and regional relations.</p>

Dip Direction	W; E
Paleoseismology studies	
Geomorphic expression	Faults of the zone form moderately steep, linear escarpments on Paleozoic bedrock, with extensive late Pleistocene and Holocene fan deposition at the base of the escarpments. Upper Pleistocene to Holocene deposits are faulted in a few localities, but no alluvial fault scarps have been investigated in detail along these faults.
Age of faulted surficial deposits	Paleozoic, late Pleistocene to Holocene.
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) <i>Comments:</i> Quaternary deposits estimated to be Pleistocene and upper Pleistocene to Holocene in age are faulted in a few places, but these age estimates are very rough. The steepness and linearity of the fault escarpments suggest late Quaternary activity. Younger Holocene fan deposits are not faulted.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> A low slip rate is inferred based on 6 to 12 m of displacement of Pliocene-Quaternary basalt flows.
Date and Compiler(s)	1997 Philip A. Pearthree, Arizona Geological Survey
References	#2072 Billingsley, G.H., 1992, Geologic map of the Hole-N-Wall quadrangle, northern Mohave County, Arizona: U.S. Geological Survey Open-File Report 92-432, 15 p., 1 pl., scale 1:24,000. #2075 Billingsley, G.H., 1993, Geologic map of the Dutchman Draw quadrangle, northern Mohave County, Arizona: U.S. Geological Survey Open-File Report 93-587, 12 p., 1 pl., scale 1:24,000. #2076 Billingsley, G.H., 1993, Geologic map of the Little Tanks

quadrangle, northern Mohave County, Arizona: U.S. Geological Survey Open-File Report 93-682, 13 p., 1 pl., scale 1:24,000.

#2070 Hamblin, W.K., and Best, M.G., eds., 1970, The western Grand Canyon district—Guidebook to the geology of Utah, n. 23: Salt Lake City, Utah Geological Society, 156 p.

#2073 Menges, C.M., and Pearthree, P.A., 1983, Map of neotectonic (latest Pliocene-Quaternary) deformation in Arizona: Arizona Geological Survey Open-File Report 83-22, 48 p., scale 1:500,000.

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