

primer on hydrology, hydraulics and floodplain impacts

Medicine Lake Stakeholder Meeting
Tuesday, March 4, 2014



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Commission Engineer



resourceful. naturally.



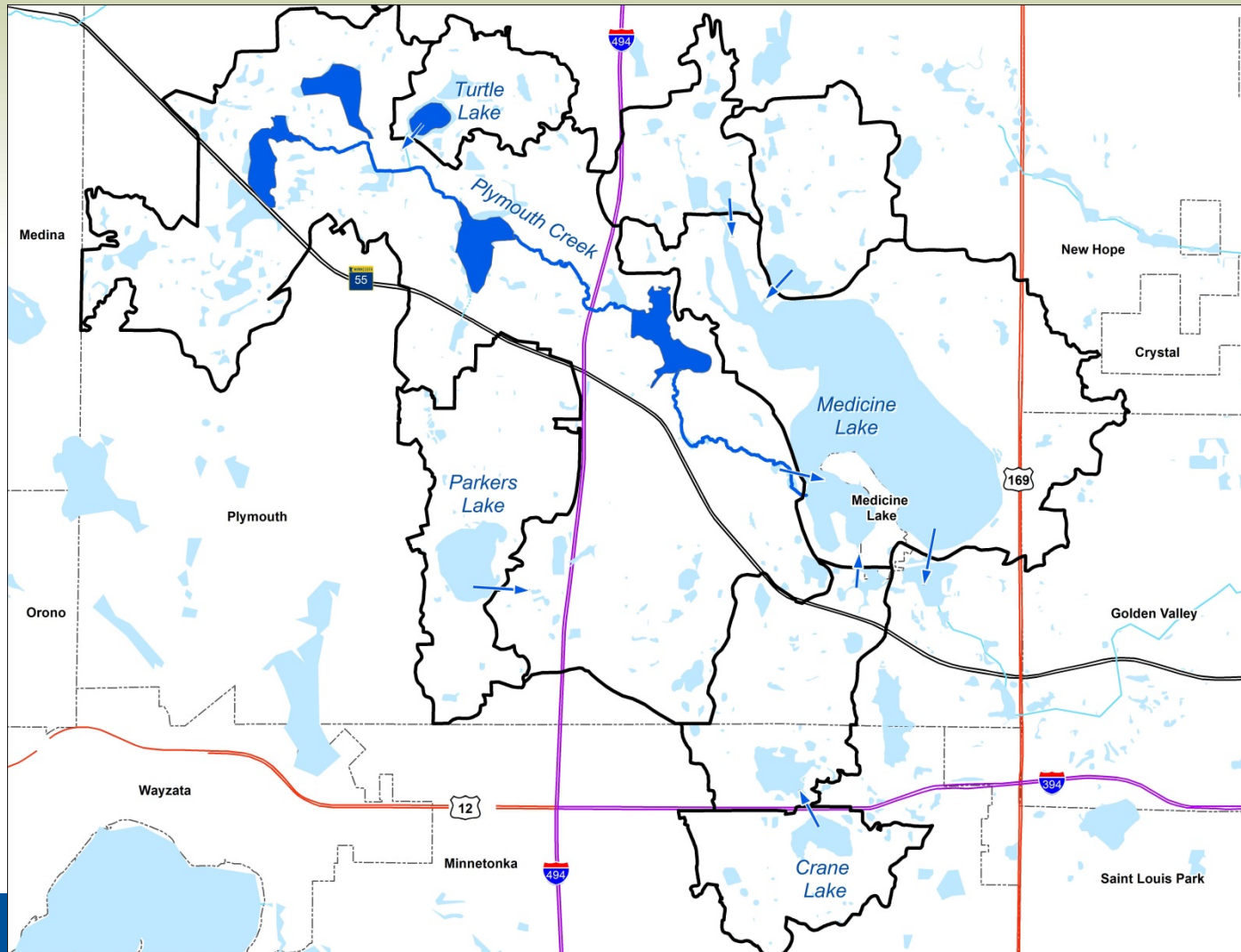
hydrology – what happens when it rains?



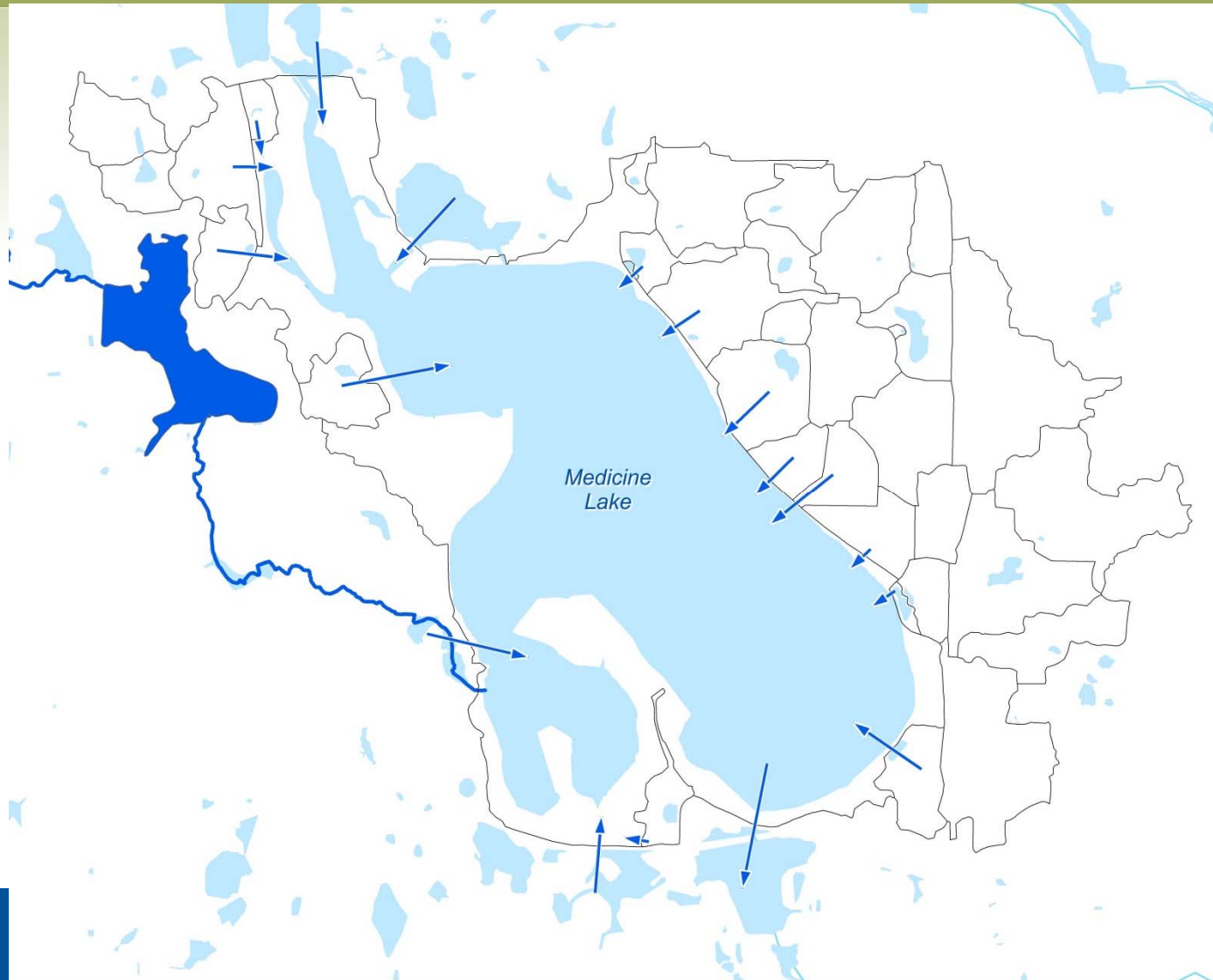
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hydrology – what happens when it rains?

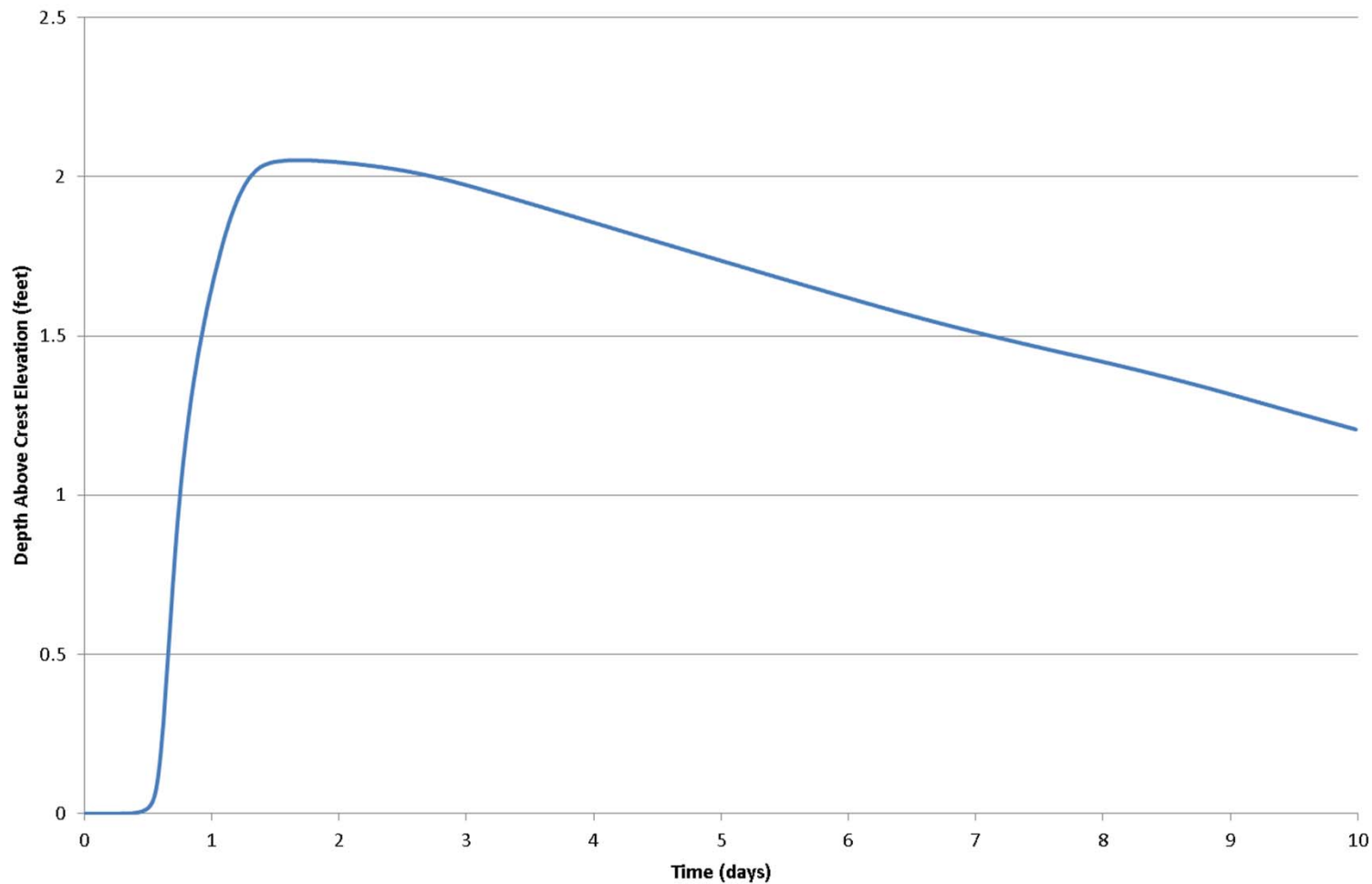


hydrology – what happens when it rains?



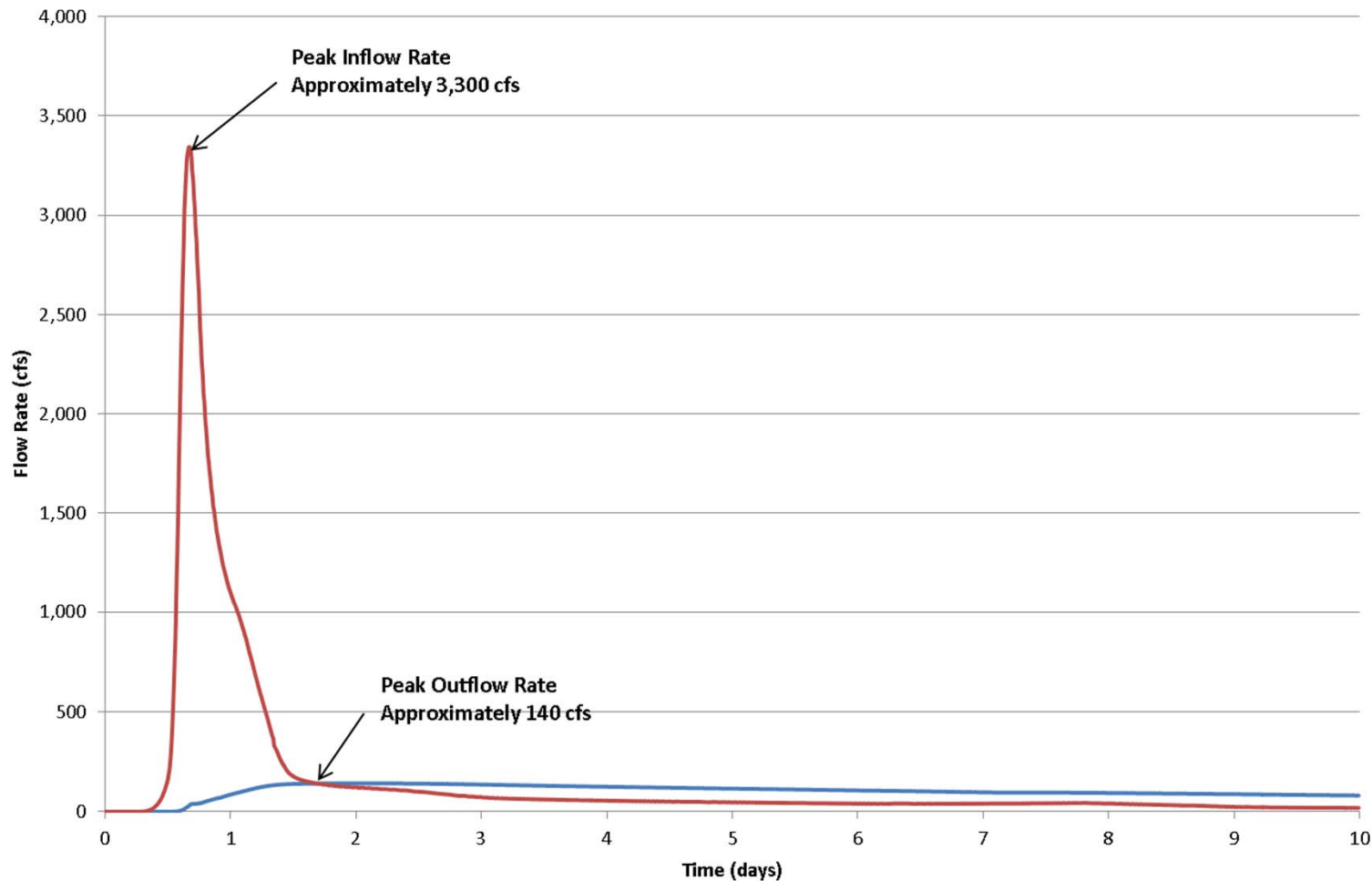
what happens during a large rainfall?

Medicine Lake water surface elevation over time
6-inch 24-hour storm event

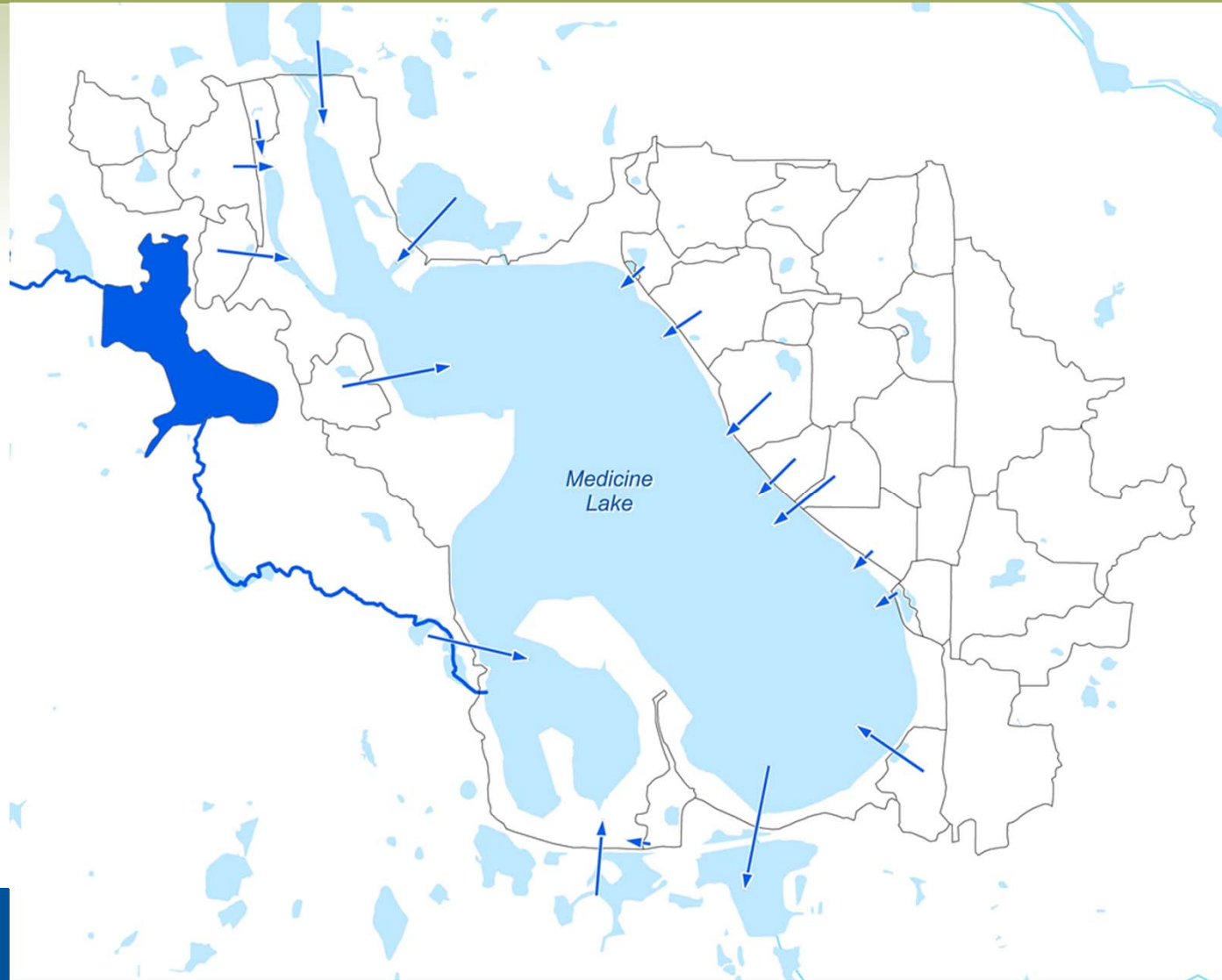


what happens during a large rainfall?

Medicine Lake inflows and outflows
6-inch 24-hour storm event



what happens during a large rainfall?



hydraulics

Medicine Lake outlet/dam

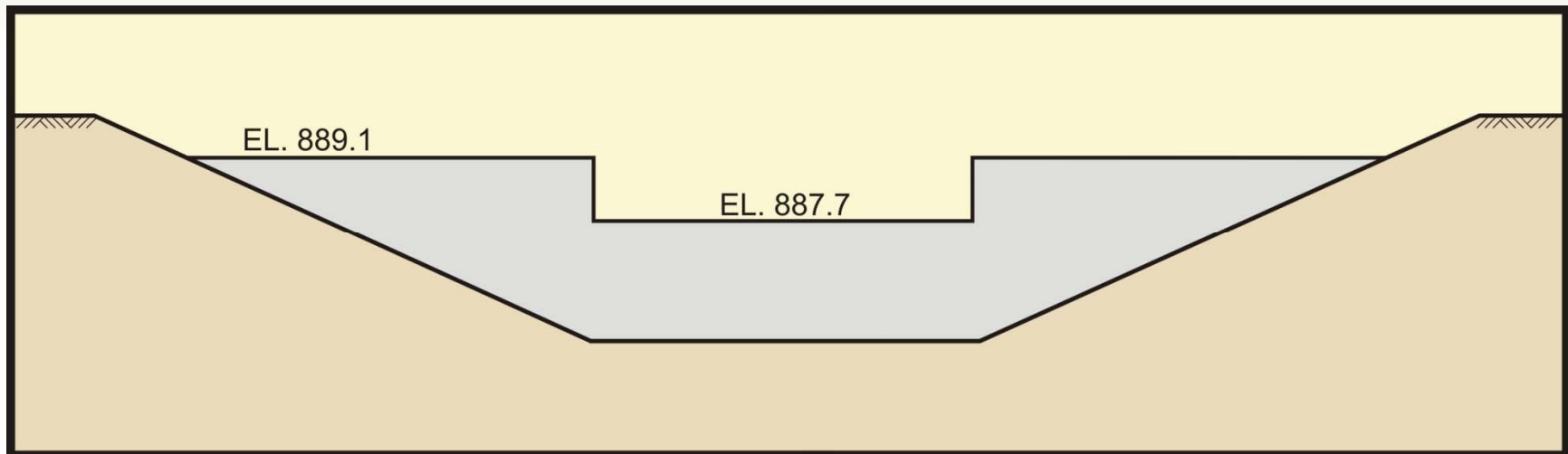


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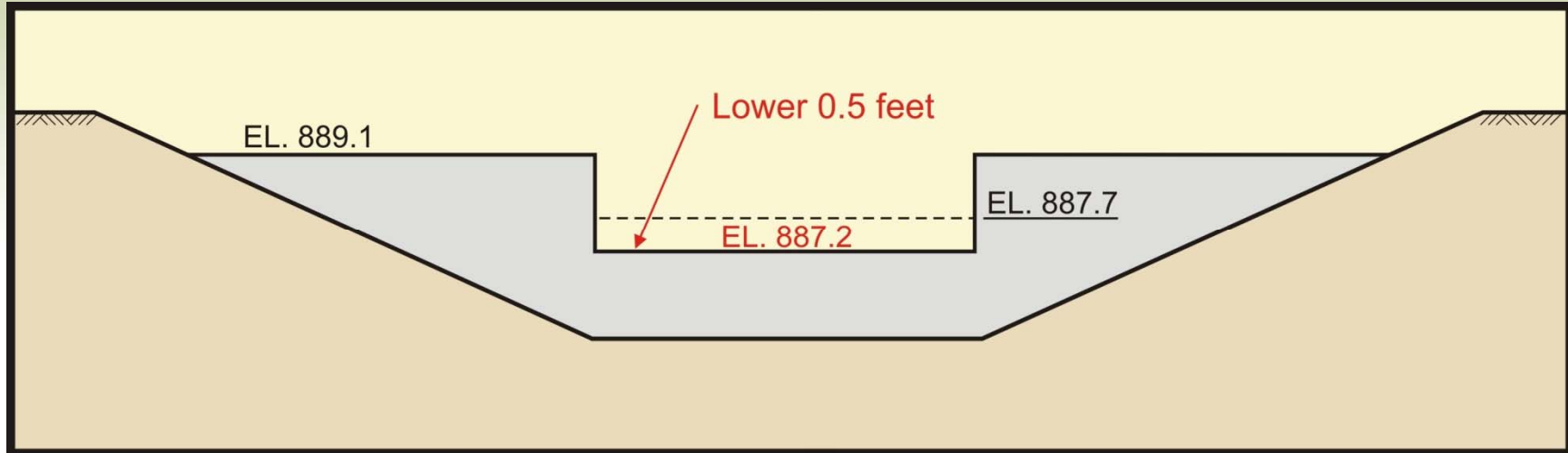


hydraulics – what happens if the outlet is modified?

schematic – Medicine Lake outlet/dam

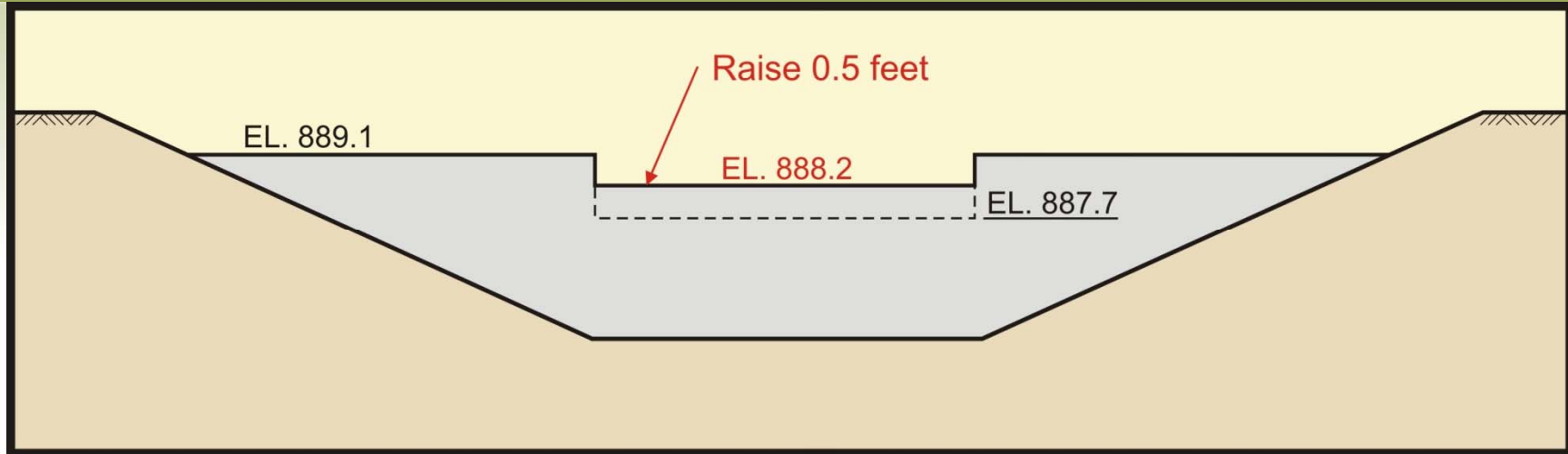


hydraulics – what happens if the outlet is lowered?



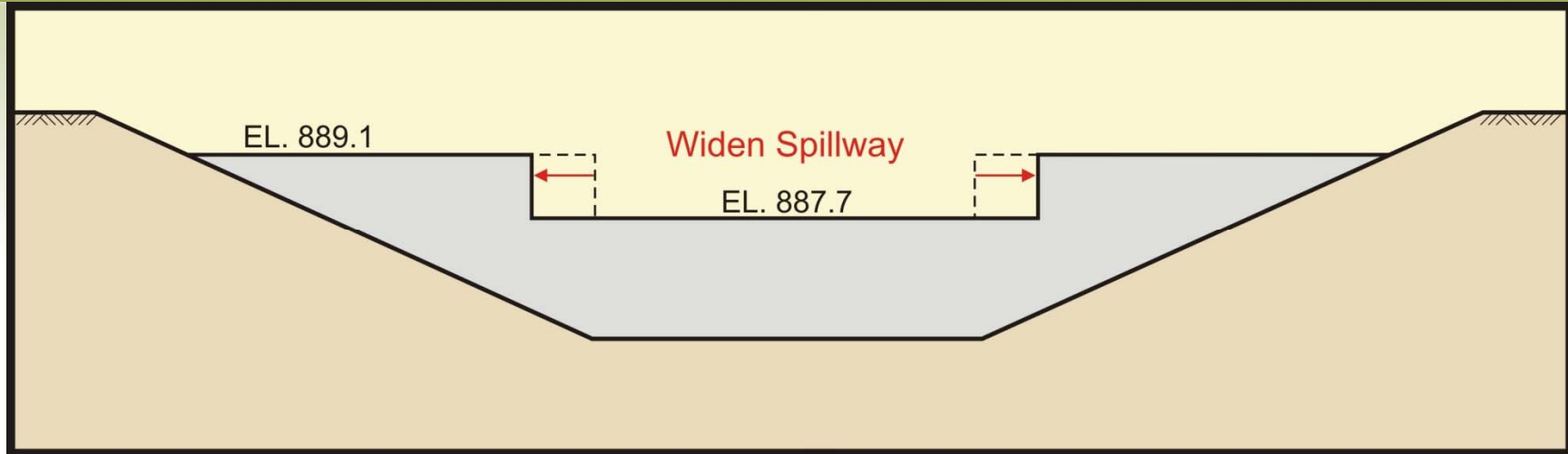
- likely lower lake flood level
- lower normal water level
- downstream flows/water levels similar to existing
- decrease water levels in upstream water bodies

hydraulics – what happens if the outlet is raised?



- likely higher lake flood level
- higher normal water level
- downstream flows/water levels similar to existing
- increase water levels in upstream water bodies
- impacts on emergent vegetation

hydraulics – what happens if the outlet is widened?



- possibly lower lake flood level
- same normal water level
- higher flows downstream
- likely higher water levels downstream
- likely shorter duration of high lake water levels