

# IT RAINS BIG! (37% MORE OFTEN THAN 50 YEARS AGO)

- Rains more than 8 inches:
  - From 1866 to 1965 four per 100 years.
  - From 200 to 2014 five per 14 years.
- In 1935 we averaged 20 inches per year now we are in the 30's
- All indications are we are still on an upward trend.
- The DNR has ordered the removal of the grate at Rush because it restricts flow
- The DNR has determined the grate has no effect on carp

# SOME BASIC CALCULATIONS

- The ELK river overflows into Briggs through the bayou bringing 2x phosphorus (green)
- The above fact is only recently understood by many in charge of watershed.
- Downstream of bayou elevation = 965 No-wake = 964.2 - (Terrain worse since 1937)
- Rain of 0.8 inches near airport can result in a 1 foot rise of lakes.
- It takes less than a 2.5 foot rise in river to overflow the river into the bayou.
- The flow into Briggs is about 9 times more than the output can handle at Rush – Greater for higher levels
- Removing the grate changes it to 7.8 times
- Had the grate been removed this year we would have had 1 no-wake event.
- We only measure critical data in 1 day increments – may need to improve.
- Grate removal is the only action we can take without engineering model – expensive but offers other solutions
- 103G.245 Subd 5 = Minnesota Statute that Gives DNR authority to order grate removal.



### Elk and Briggs estimated elevations by date

