

DAM REMOVALS IN ILLINOIS

MARCH 11, 2014



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Dams and Public Policy



- Dams were constructed over the past two centuries for many worthy purposes
 - Hydropower
 - Navigation
 - Water Supply
 - other
- Times have changed
- Public needs have changed
- Policy at local, state, regional and federal levels have and continue to change

Times Have Changed



- Hofmann Dam was originally constructed in the 1800's to run a grist mill, and the last major reconstruction was in 1949/1950 by OWR. Hydropower was the intended use, but hydropower was only in use for a few years after 1950.
- Many of the Dams on the Des Plaines River were constructed by the Office of Water Resources in the 1940's and 1950's
- The Forest Preserve District of Cook County and the Office of Water Resources (Division of Waterways in 1941) partnered to construct several low head dams on the Des Plaines River
- Excerpt from 1941 Annual Report

Excerpt from: STATE OF ILLINOIS; TWENTY-FOURTH ANNUAL
REPORT OF DIVISION OF WATERWAYS - 1941



Des Plaines River Dams

During dry summer months when the flow in the Des Plaines River is low, great expanses of stream bed and mud banks are exposed creating unsightly and offensive conditions.

The Forest Preserve District of Cook County owns much of the land bordering the Des Plaines River as it flows through Cook County. Its holdings are heavily used recreational areas and peak attendance occurs during the months when the flow in the river is usually a minimum. The attractiveness and all around value of this important recreational area would be vastly improved if minimum flow water levels could be stabilized at some point where the stream bed would always be covered. Its value would be further increased if the minimum water depths maintained permitted canoeing along its entire length through the Forest Preserve District. These objectives must be accomplished without materially increasing flood peaks on the Des Plaines River.



Exerpt from: STATE OF ILLINOIS; TWENTY-FOURTH ANNUAL
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Careful preliminary study indicates that stabilized minimum flow water depths sufficient to permit canoeing and light boating between the Hofmann Dam in Riverside and the existing No. 1 dam, located near the Cook-Lake Counties line can be accomplished by the maintenance of two existing dams and the construction of several new low channel dams. The dams would be so spaced and of such heights that low flow depths of not less than two feet would be maintained at the downstream toe of each structure. **Because of the low rate of fall along the portion of the channel under consideration (approximately one foot per mile), this could be accomplished by eight to ten properly spaced channel dams with crests three to four feet above stream bed.** The State Legislature has appropriated \$50,000.00 to be used in this improvement program.



Design Considerations in 1940's

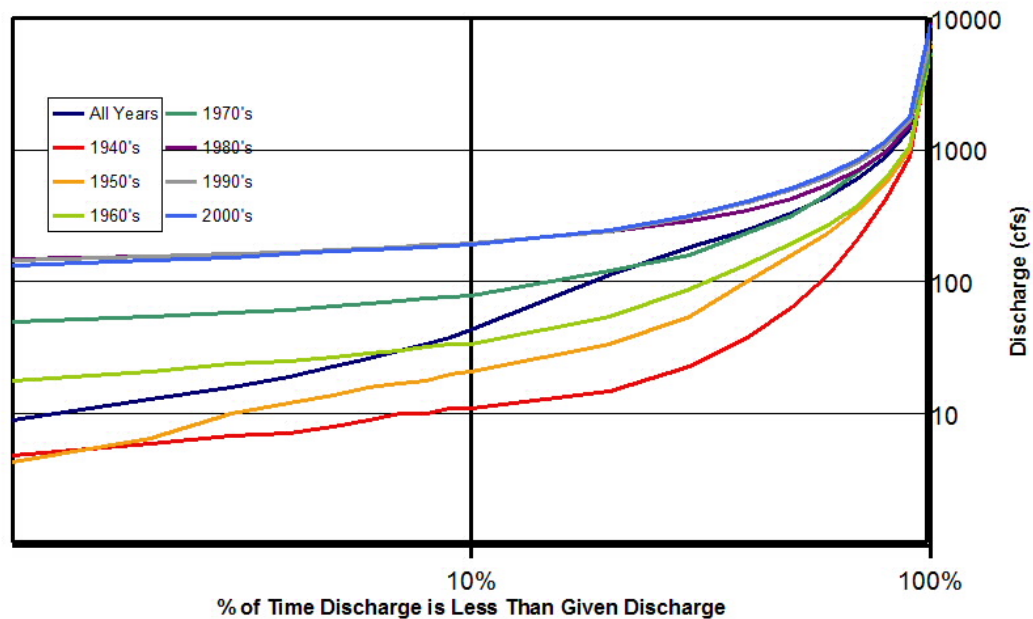


- **Stable water levels at low flow**
- **Unsightly river conditions**
- **Recreational use of the river**
- **3 to 4 foot high structures**
- **8 to 10 structures**
- **Concrete design**

Flow Conditions in 1941



- Low Flow
- Historic flood stages and Record Discharges



Flow Conditions in 1941



Des Plaines River at Riverside
 % of time discharge is less than given value

	All Data	1940's	1950's	1960's	1970's	1980's	1990's	2000's
	Discharge	Discharge	Discharge	Discharge	Discharge	Discharge	Discharge	Discharge
Minimum Value for Time Period	0	1.6	0.5	0	28	134	126	101
Date of Minimum Discharge	8/23/1962	8/14/1944	10/21/1953	8/23/1962	8/31/1974	10/4/1982	9/20/1996	9/4/2005
Percentage								
1%	9	4.9	4.3	18	50	148	147	134
2%	13	6	6.5	21	54	155	156	145
3%	16	6.8	10	24	58	161	164	154
4%	19	7.2	12	25	61	167	169	162
5%	23	8	14	27	65	172	174	170
6%	26	9	16	29	68	177	180	175
7%	30	10	17	30	72	182	185	179
8%	34	10	18	32	75	188	190	183
9%	38	11	20	34	77	192	193	188
10%	43	11	21	34	79	197	198	193
20%	114	15	34	54	122	240	243	246
30%	185	23	55	88	161	290	310	319
40%	246	38	101	135	233	350	396	407
50%	330	64	158	195	318	431	501	507
60%	446	113	236	269	466	546	626	659
70%	619	215	357	379	685	707	809	856
80%	888	423	562	610	976	974	1080	1170
90%	1420	889	1000	1060	1570	1530	1630	1770
100%	9180	6230	6210	5330	5460	9180	6770	8910

Recreational Use



- Roller canoe passage – a novel idea
- Depth of impoundment
- Continuous depth with ability to sustain canoeing

Times, Flows, and Policies Have Changed



- Low flows are directly impacted by the increase in treated sanitary plant effluent
- Lake Michigan water is used extensively within the Des Plaines watershed and is discharged into the river
- Dams are documented to affect the movement of fish
- Recreational safety is threatened by these dams

Flow Conditions in 2014



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Public Needs Have Changed



- **1941**
 - more surface water desired in the Des Plaines River
 - Sanitary plant effluent into Des Plaines was of very poor quality
- **2014**
 - We are more aware of fish migration concerns
 - Water Quality has improved
 - Public recreational use is growing
 - Public safety on the water is of increased concern

Public Policies Have Changed



- **Environmental awareness has increased over time (fish migration, sediment, wetlands, etc)**
- **State commitment to public access and safety**
 - DNR Water Trails
 - Governor's Dam Removal Initiative
- **Federal priorities have changed**
 - Ecosystem improvements
 - partnerships

Governor's Dam Removal Initiative



- **FOR IMMEDIATE RELEASE:**
- **October 26, 2012 CONTACTS:**
-
- **Governor Quinn Announces Completion of Hofmann Dam Removal**
- **Dam removal on Des Plaines River, Chicago River and other waterways will improve aquatic habitat and remove dangerous impediments to paddlers**



Governor's Dam Removal Initiative



- **“Free-flowing rivers benefit all of Illinois,” Governor Quinn said. “Removing these dams will improve waterways across our state, making them safer for kayakers and paddlers who use them for exercise and recreation, and for anglers who enjoy fishing in these rivers. This dam removal initiative will improve conservation, water quality and outdoor recreation in Illinois.”**
- **The Illinois Dam Removal Initiative will invest nearly \$10 million to remove 12 dams in Cook County on the Des Plaines and Chicago Rivers, including the three that have already been removed. Those projects included removing the Hofmann, Fairbank and Armitage dams in Riverside, which is helping to restore the Des Plaines River to a more free-flowing channel. Removing these dams increases the diversity of fish and aquatic life, as well as eliminating dangers for undercurrents that were a threat to paddlers and fishing enthusiasts.**



New Directions

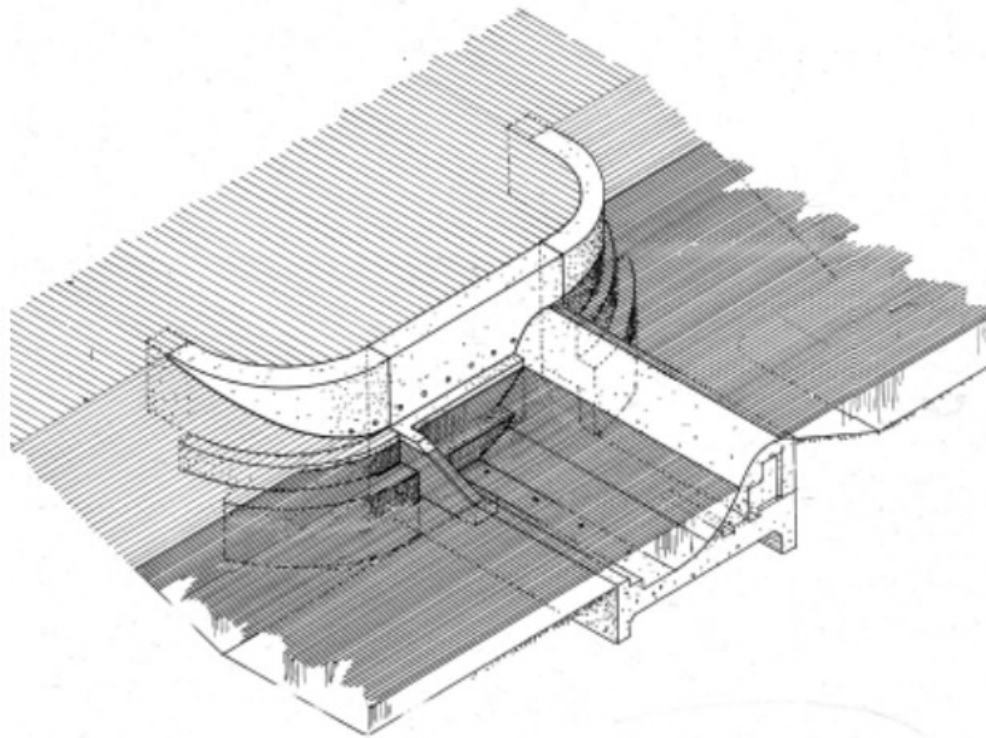


- **Hofmann, Armitage, Fairbank Dams removed**
 - Corps of Engineers, DNR, Forest Preserve District projects
 - Immense public concern about the change
 - ✦ Use of the water – depth and width
 - ✦ Community image – we’ve always had a dam
 - ✦ Downstream flood concerns expressed, upstream flood relief hoped for
 - Concerted efforts by Corps and DNR allayed most fears
 - Five year monitoring plan in place

Typical Dam Configuration



Touhy Avenue Dam



•• ISOMETRIC VIEW ••

New Directions

Status of Dam Removals



- **The North Branch of the Chicago River --**
 - *Tam O' Shanter Dam - Removal
 - *Chick Evans Golf Course Dam - Removal
 - *Winnetka Road Dam - Removal
 - *North Branch Dam at River Park - Modification
- **The Des Plaines River --**
 - *Dam 1 - Removal in progress
 - *Dam 2 - Removal
 - *Dam 4 - Removal
 - *Dempster Street Dam - Removal
 - *Touhy Ave Dam - Removal
 - *Armitage Dam - Removal (work complete)
 - *Fairbank Road Dam - Removal (work complete)
 - *Hofmann Dam - Removal (work complete)
- **Other dams**
 - *Blackberry Creek Dam (Yorkville, Fox River) --(work complete)
 - *Vermilion River Dam (Danville, Vermilion River) - Removal – Local approval received
 - *Ellsworth Park Dam (Danville, Vermilion River) - Removal – Local approval received
 - *Dam Buzzi Unicem Dam (Oglesby, Vermillion River) - Additional modification
 - Wilmington Dam (Wilmington, Kankakee River) – Removal pending transfer of ownership

Hofmann Dam



Danville Dam



Danville



Remaining Challenges



- **Public concerns regarding climate change**
 - How might climate variations affect today's decisions
- **Fish Migration**
 - Is it advantageous to allow all fish to move
 - Will more Asian Carp move into the Des Plaines
- **GLMRIS – Great Lakes Mississippi River Interbasin Study**
 - What might the future be
- **Lake Michigan Water**
 - How will this be affected by GLMRIS
 - How much water will be used in the future

Future



- Risk and uncertainty
- Greater awareness of the watershed connectivity between issues and jurisdictions
- Governmental approach to problem solving
 - Need to look toward a future horizon
- Population Change
- Public Infrastructure Needs Must Be Addressed

Your Challenge



- Are you making decisions that will stand the test of time?
- Will your children and grandchildren be in the same situation you are in?
- How will you affect public policy on matters affecting the rivers, lakes and streams in Illinois?

Thank You



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