

# PERMIT TO TAKE WATER

*... A Practitioner's Perspective*

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Christopher F. Crozier, P.Eng.

Principal • C.F. Crozier & Associates Inc.

Collingwood, ON • [cfcrozier.ca](http://cfcrozier.ca)



CF CROZIER & ASSOCIATES  
LAND DEVELOPMENT ENGINEERS

# AGENDA

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- **Permit to Take Water (PTTW) Overview**
- **CASE STUDY:**
  - **Golf Course Operating Parameters**
  - **Objective**
  - **Solution**
- **Summary**



# OVERVIEW • PTTW

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- New Requirements of...

**Ont. Reg 387 / 04**

(Water Taking & Transfer)

**IS THIS THE “ *NEW NHL* “ ?**



# **ONT. REG. 387 / 04**

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- **Strengthens MOE's role in protecting Ontario's Water Resources**
- **How?**
  - **Protecting Watersheds**
  - **Notifying Others**
  - **Water Conservation**
  - **Reporting Water Takings**
  - **Prohibiting Water Transfers out of Water Basin**
  - **Establish Standards when Reviewing Applications**



# **BASICS OF APPLYING FOR A PTTW**

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- **Use Guide**
- **When is Permit a Needed ?**
- **Who Applies ?**
- **Review Process**
- **Other Approvals**
- **Categories of Proposals (1, 2, or 3)**
- **Expiry Dates**
- **Where to Get Help ?**



# CASE STUDY

## *Long Ball Golf Course • PTTW Renewal*

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- **18-Hole Championship Golf Course**
- **Irrigation supply from surface water taking**
- **Existing PTTW**
  - **1000 Gpm from Duffer's Creek**  
**(“*Water on Demand*”)**
  - **10-hour max water taking cycle**
  - **215 days per year**
  - **550,000 Gal / day max**



# Existing Operating Parameters

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- **Source: *Duffer's Creek***
  - 5<sup>th</sup> order watercourse
  - Average base flow > 20,000 Gpm
- **Irrigation Use (*Typical*):**
  - 650 Gpm *on 8-10 hour cycle*
  - 325,000 Gpd *max daily use*
  - 27 MG / year *max annual use*



# Objective

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- **Secure renewal of PTTW with supply that meets or exceeds Club's needs**



# STEP 1: Pre-Consultation

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- Status quo renewal NOT Category 1... WHY?

*“ ... in some cases, the existing level of water taking in an area may pose a risk to the integrity of the ecosystem.”*

*“ ... Director may determine that the applications to renew Permits ... must be submitted as Category 2 or 3 applications.”*

- PTTW Manual, MOE April 2005, pg 13



# STEP 2: Review of Existing Water Supply System

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- **650 Gpm @ 8-hour cycle**

⇒ **312,000 Gpd x 1.25 Factor of Safety**

⇒ **390,000 Gpd (*Design Volume*)**

- **Equivalent Supply Model**

**390,000 Gpd over 24 hours ⇒ 270 Gpm**



# DUFFER'S CREEK STATISTICS

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**Base Flow (summer) ⇒ 20,000 Gpm**

**$7Q_{20}$  ⇒ 8,500 Gpm**

**5% of  $7Q_{20}$  ⇒ 425 Gpm**



# STEP 3: Evaluate Water Supply Options

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- **Option 1**  $\Rightarrow$  **Status Quo**
  - Taking of 1000 Gpm *“water on demand”*
  
- **Permit Category**  $\Rightarrow$  **3**



# CATEGORY 3 PERMIT APPLICATIONS

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## Requirements

- Impact Analysis of Proposed Taking on Aquatic Ecosystem (IFA)
- Water Availability Assessment

## Factors

- MOE Evaluates Potential Impacts in Detail
- 12 to 18 Month Process (*typical*)
- Minimum Threshold



## **STEP 3: Evaluate Water Supply Options (con't)**

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- **Option 2**  $\Rightarrow$  **Modified Taking Approach**
  - Taking 400 Gpm c/w balancing pond
  - ie.  $< 5\%$  of  $7Q_{20}$  low flow
  
- **Permit Category**  $\Rightarrow$  **2**



# CATEGORY 2 PERMIT APPLICATIONS

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## Requirements

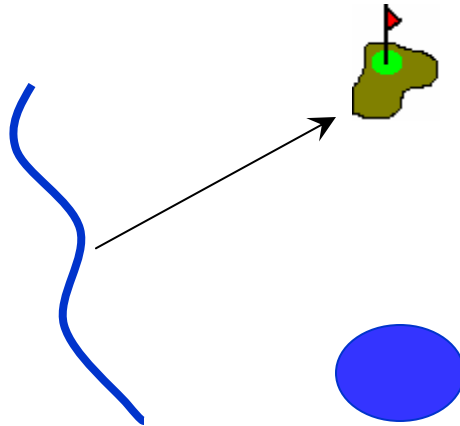
- Confirm water taking meets criteria for Category 2
- No technical impact assessment (IFA)

## Factors

- Technical study costs much lower
- 3 to 4 month review process (*typical*)
- Need to construct balancing pond



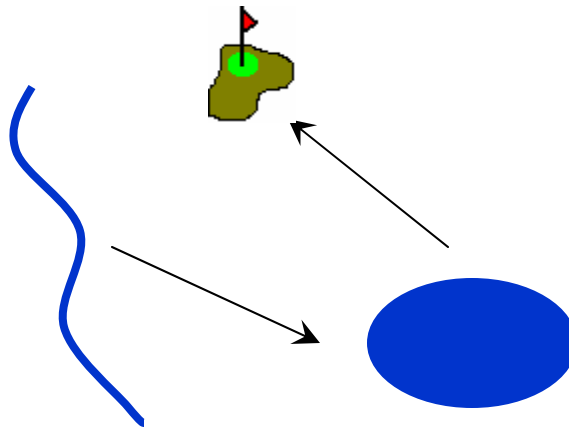
**Before**



- On-demand water taking

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**After**



- Balancing Pond

# BALANCING POND DESIGN

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- Retrofit aesthetic pond
- Consider Peak Daily Demand

<i>Total Demand</i>	⇒	<b>390,000 Gal</b> [over 10-hr period]
<i>River Supply</i>	⇒	<b>240,000 Gal</b> [400 Gpm x 10-hr]
<i>Net Storage</i>	➔	<b>150,000 Gal / day</b>



# BALANCING POND DESIGN

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- **Check Pond Recharge**

*150,000 Gal ÷ 400 Gpm ⇒ 6 ½-hr recharge time*

- **If irrigation cycle ends @ 4 am (typical)**

*Top-up pond by 10 am ⇒ OK*



# STEP 4: Application & Follow-Up

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- **Fee**  $\Rightarrow$  **\$ 750** [Category 2]
- **Application Form**
- **Supporting Material**
  - **Calculations**
  - **Plans**



# Summary

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Permit To Take Water Application, Guides & Manuals

[www.ene.gov.on.ca/envision/water/pttw.htm](http://www.ene.gov.on.ca/envision/water/pttw.htm)

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