

# **Strategic Energy Management: Efficiency First**

**Case Study Karen Magnussen CRC**

*July 19, 2016*



# CURRENT ENERGY INVESTMENT



**3.4 million**  
total energy cost  
(\$)



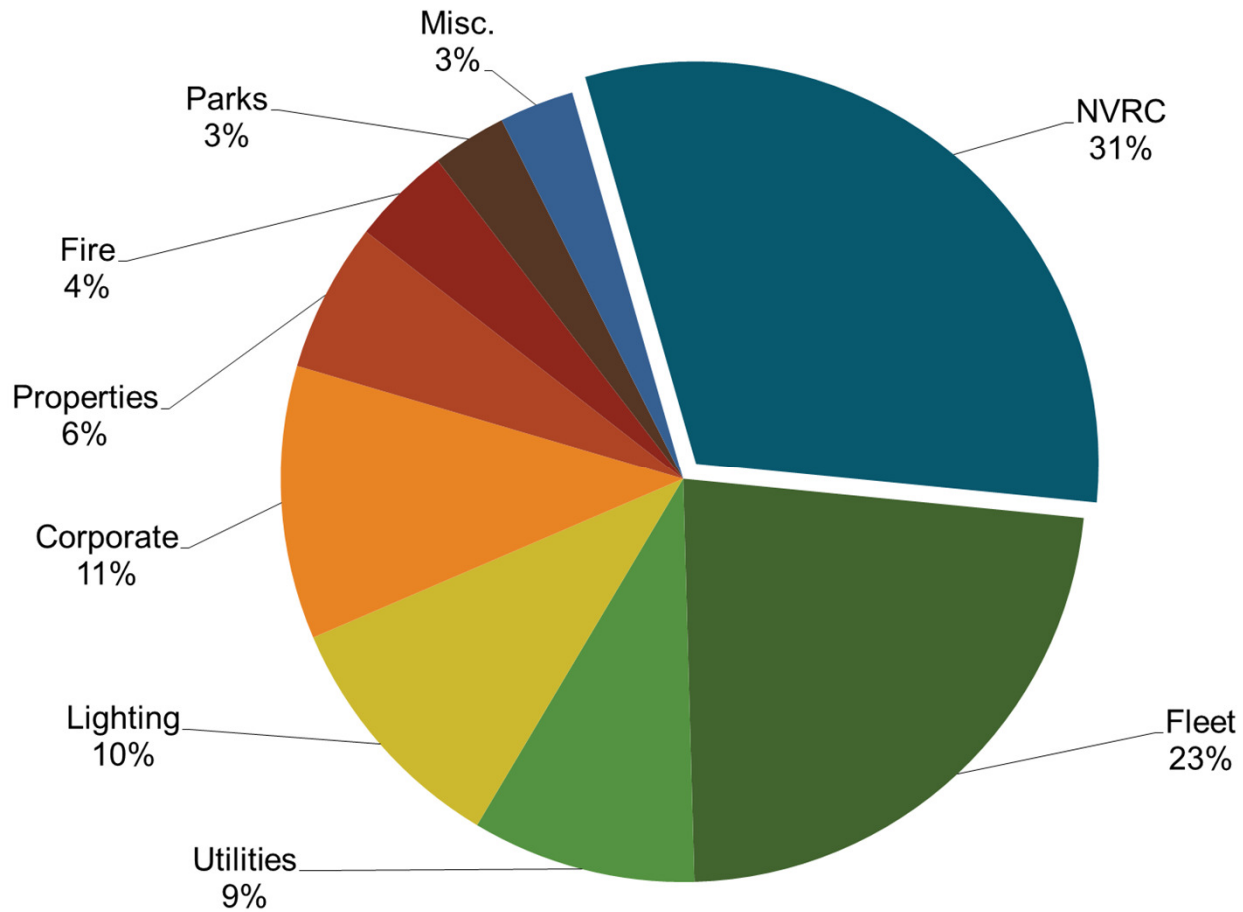
**37.9 million**  
total energy use  
(eKWh)




**4,376 tonnes**  
total ghg emissions  
(egCO<sub>2</sub>)



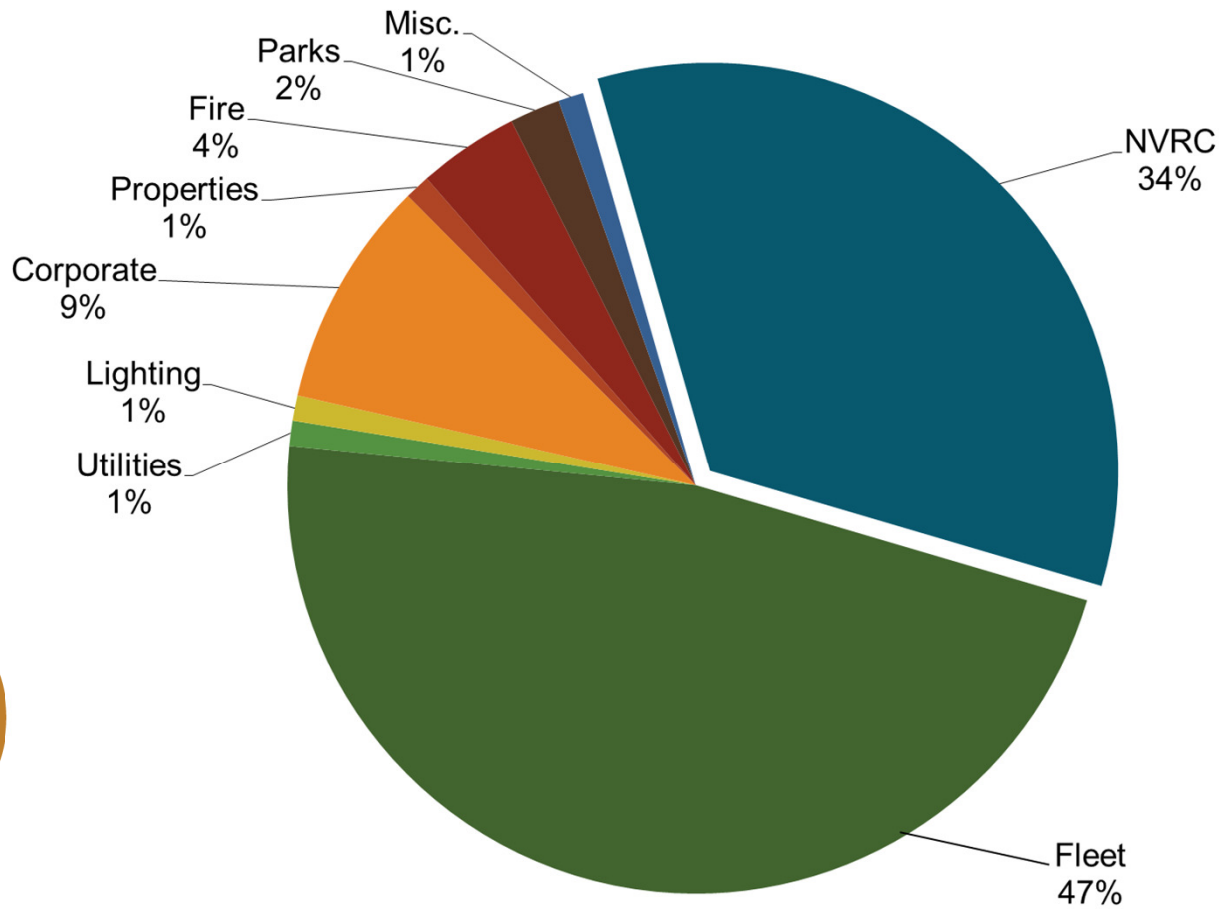
# CURRENT STATE: ENERGY USE 2015




  
**37.9 million**  
total energy use  
(eKWh)



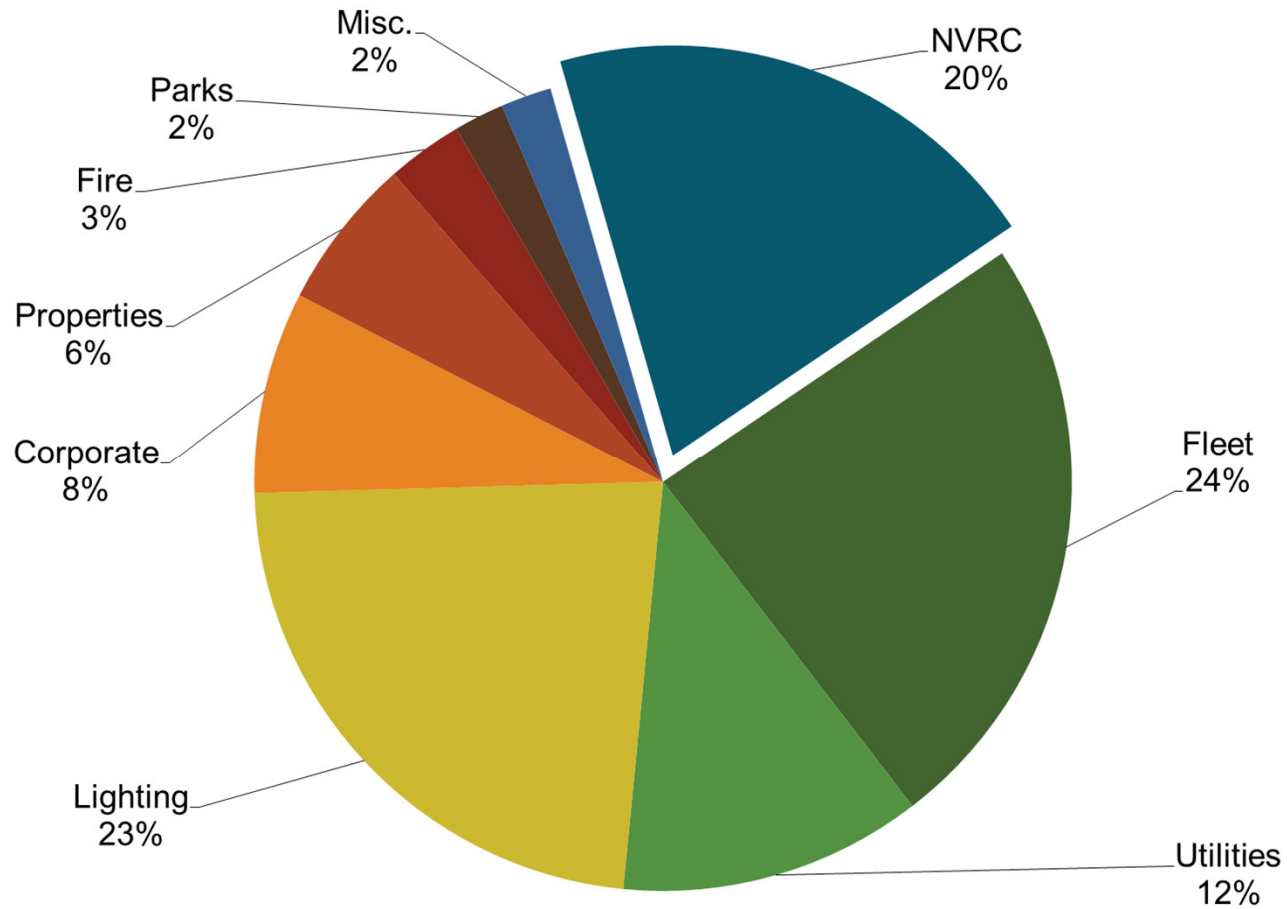
# CURRENT STATE: GHG EMISSIONS 2015




  
**4,376 tonnes**  
total ghg emissions  
(egCO<sub>2</sub>)



# CURRENT STATE: ENERGY COSTS 2015



  
**3.4 million**  
total energy cost  
(\$)



# DNV STRATEGY: EFFICIENCY FIRST

1

**Avoid Waste: Energy,  
Material, Effort, Money  
and Time**

2

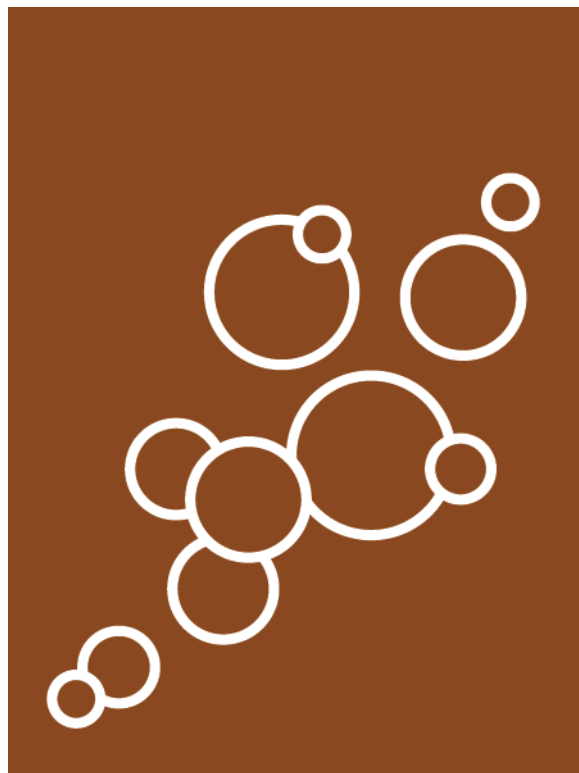
**Reduce Energy use  
before finding new  
sources**

3

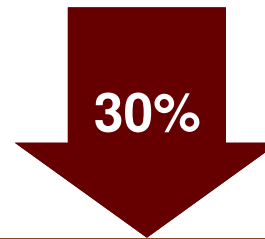
**Integrate capital  
renewal and  
operations**



# TARGET: 30% REDUCTION GHGS



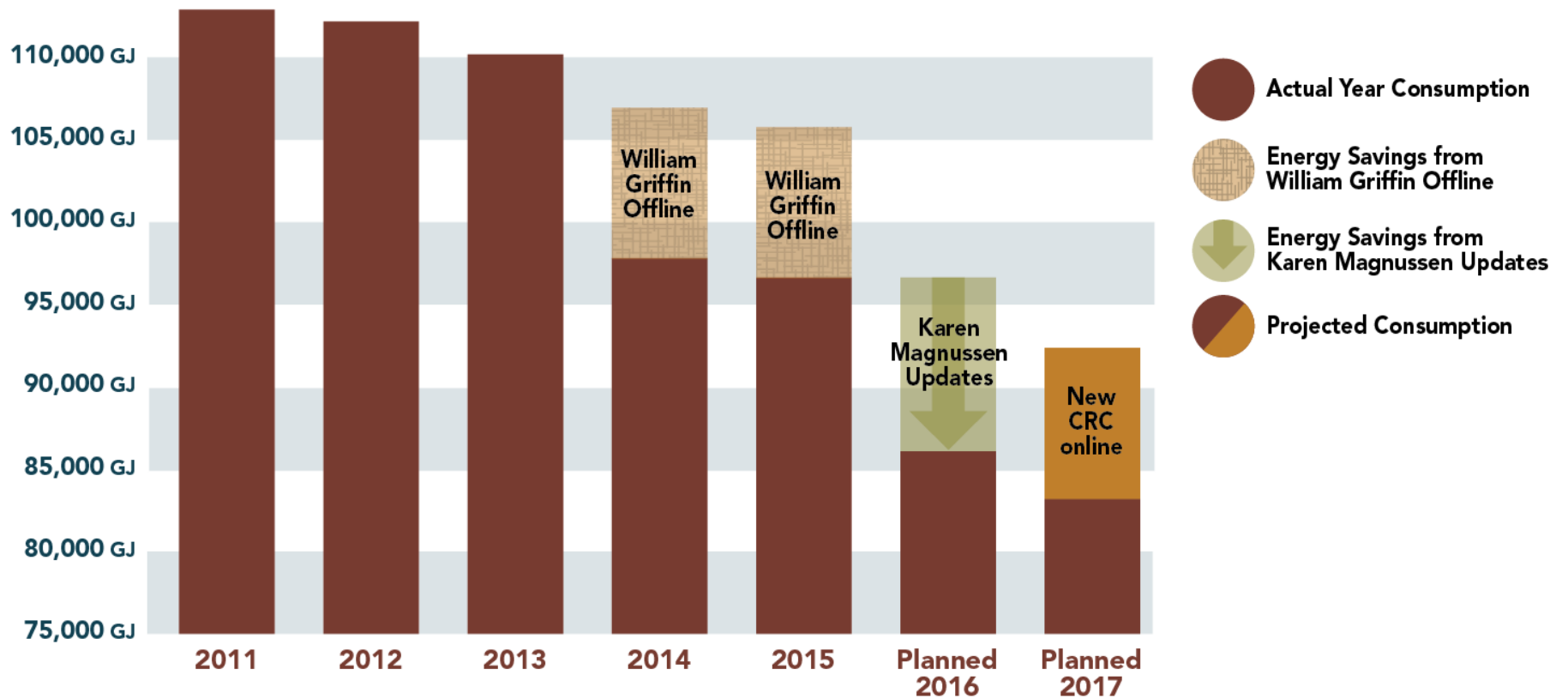
2011



2020



# MEETING TARGET: REDUCING ENERGY USE





# KAREN MAGNUSSEN CRC

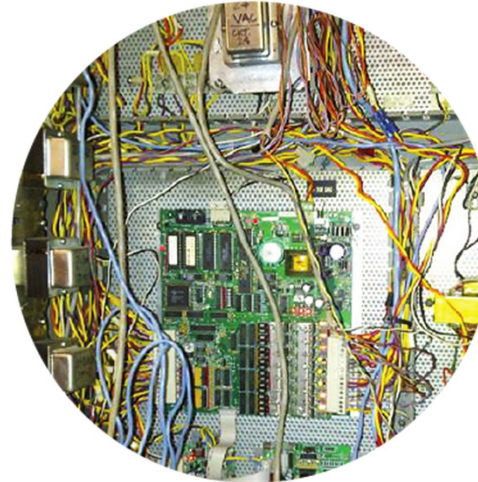


# BY THE NUMBERS

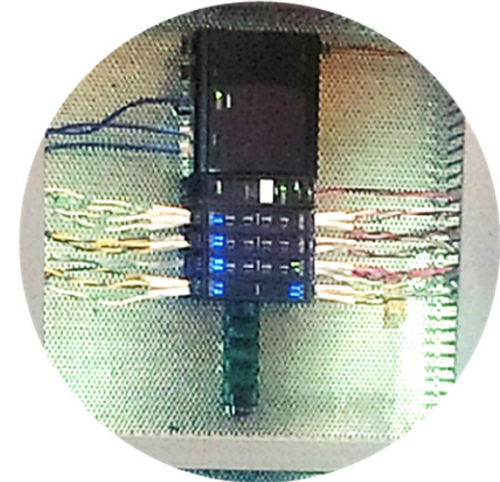


# OPERATIONAL BENEFITS

1. Upgrading building equipment
2. Facility longevity
3. Positive comfort work & play spaces
4. No facility shut-down
5. Operator training
6. Dramatic GHG reductions



**Before**

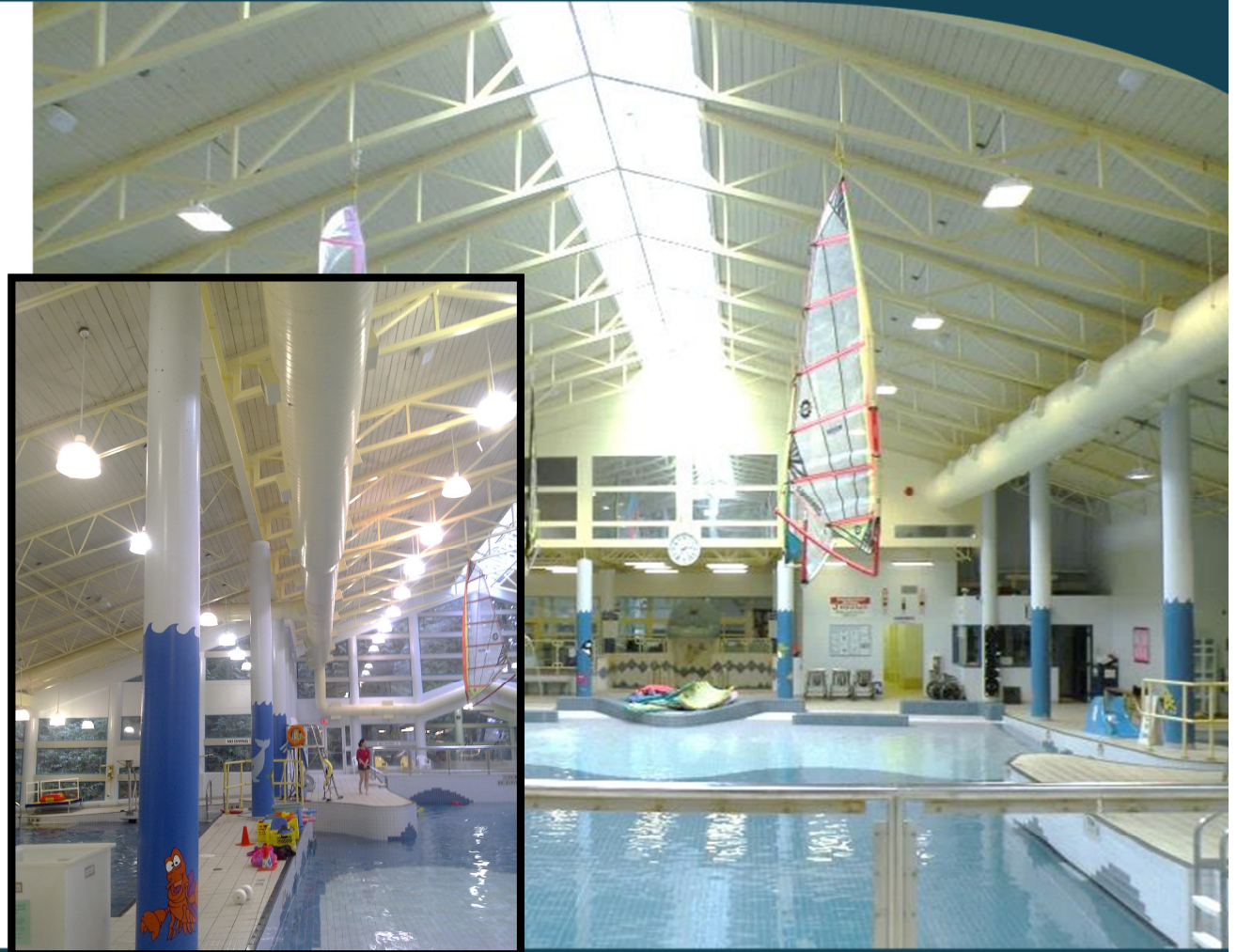


**After**



# CLIENT BENEFITS

- Improved **Comfort**
- **Temperature and humidity** will be easier to regulate – comfort in pools & Ice quality
- **Lighting** – right brightness and colour
- **Fresh Air** will be maximized at lower energy cost



# ARENA LIGHTING



# OUTDOOR LIGHTING



# MECHANICAL SYSTEMS



# QUESTIONS?

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