



# Impacts associated with municipal services

Oil spills and the response place numerous stresses on municipalities. These create some impacts and exasperate a number of others.

One of the most prevalent impacts is that municipal staff and leadership working on the spill response get overwhelmed and exhausted from the long hours and constant stress. Because the spill must take priority, many other normal activities suffer, creating problems for all activities associated with local government. Moreover, once the emergency is over, staff need recovery time. There is also the additional burden of filing for compensatory damages.

### Drinking water shutdown: DM-932

On July 23, 2008, the oil tanker *T/V Tintomara* collided with the fuel barge *DM-932* near downtown New Orleans, Louisiana. The oil tanker was not damaged but, the *DM-932* barge ruptured in half at its collision point and released 282,828 gallons of oil polluting about 100 miles of the Mississippi River.

Downriver from the collision, cities and parishes that pull drinking water from the river (i.e., Gretna, Algiers, St. Bernard Parish and Plaquemines Parish) shut their water intakes out of fear of possible treatment system contamination from oil. Some water intake remained closed for more than 18 hours. People were advised to refrain from using water and to drink bottled water. When the valves were reopened, a cleansing process had to be followed, which made the water impotable for 24 hours [1]. However, residents remained skeptical:

*"They said the water is fine, but I bought some gallons of water this morning. I don't think I'm ever drinking this water again. It was never a clean river, but this is a big mess" [2].*

Temporary water shortage has social, economic and environmental impacts. The severity of the impact depends on the water demand, expected duration of water shortage, alternative source options, social and economic importance, purpose of water use, and the prevention of structural damage [1, 3-5].

### Impact to Municipal Services

- Municipal staff overwhelmed
- Drinking water supply interruption
  - Hygienic problems
  - Fire safety problems
  - Economic impacts to supplier
  - Economic impacts restaurants
  - Quality of life impacts
- Loss of tax revenue
  - Cancellation of projects
  - Increase of tax rate
  - Reduction in credit rating
  - Decline of infrastructure
- Improved emergency response
  - From experience of this spill



**Sunken DM-932 Barge** Photo: US Coast Guard.



## Human Dimensions Impacts of Oil Spills

The interruption of a basic utility like drinking water is obviously much more than a simple inconvenience. Fire fighting is impacted. Additionally, the loss of revenue to the water supplier can be significant.

### Loss of tax revenue: *Cordova Alaska*

The *Exxon-Valdez* spill of 1989 damaged the herring fishery of Prince William Sound. This had an immediate and permanent effect of reducing tax revenues to the city by over \$300,000 per year. Because the fishery never



**Downtown Cordova** Photo: T. Webler

recovered, the City was forced to cancel a school improvement project (which was delayed until 2009) and to raise its sewer and city sales taxes. The decline in public amenities was associated with outmigration of some residents [6].

### Gaining from experience: *Bouchard-120*

On April 27th, 2003, the tank barge *Bouchard-120* grounded on a reef and released 98,000 gallons of oil into Buzzards Bay, MA. The subsequent response and cleanup involved emergency response staff from 17 municipalities.

The interagency collaboration that happened as a result of this spill produced positive impacts in both communication and response preparedness. Many governmental personnel agreed that relations among agencies and NGOs improved as the result of the spill and that the agencies involved in the spill tend to be more inclined to work collaboratively together. This individual remarked that, even 4 years later, the effect has been positive:

*It seems to have brought together communities and individuals to address problems. And I think that there is still legacy of those bridges and partnerships that formed as the result of the spill that was at least positive thing down the road. This is true both in term of agencies and agency cooperation, and understanding roles and responsibilities and assets that can be brought together in the case of the oil spill... I can speak with any agencies now... In a case of a very big crisis where there is not enough manpower or agency expertise, I think there is a better appreciation of all the assets that we brought and expertise that can be brought in the case of a spill [1].*

In addition to the increased familiarity among emergency response teams another “silver lining” of the response was that gaps in the response system were identified and additional funds were secured to improve it [1].

### References

1. Lord, F, S. Tuler, T. Webler., and K. Dow. *A case study into the human dimensions of the Bouchard-120 oil spill in Buzzards Bay, Massachusetts*. SERI: Greenfield MA. February 2010.
2. Bragalli, C., G. Freni, and G. Loggia, Assessment of Water Shortage In Urban Areas, in *Methods and Tools for Drought Analysis and Management*, G. Rossi, T. Vega, and B. Bonaccorso, Editors. 2007, Springer Verlag. p. 375-398.
3. Kirkham, C. and R. Vargas, Oil spill shuts down 80 miles of river in *Times-Picayune* 2008: New Orleans.
4. Schleifstein, M., M. Gordon, and M.E. DeCoursey, Reopening of river remains days away, in *Times-Picayune* 2008.
5. Kirkham, C. and J. DeGregorio, Barge belches more oil, closing river for 6 hours; Water intakes in three parishes are shut down temporarily, in *Times Picayune*. 2008.
6. Webler, T. and S. Tuler. *Cordova 20 years after: The persistent human impacts of the oil spill*. Report. SERI: Greenfield. February 2010.