

FM Global 52nd Floodplain Management Association Conference, Batemans Bay, NSW – February 2012

Planning Maps and Flood Maps, key elements of floodplain management and effective permanent or emergency flood protection of property

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Flood protection of property

- Flood risk management
- Relevance of flood data
- What can be done to mitigate the residual flood risk:
 - Private physical flood protection
 - Private flood (emergency response) plans

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Flood Risk Management (Flood protection of property)

- Avoid building in flood-prone areas (PMF)
 - impractical!
- Provide permanent physical protection (PMF)
 - impractical!
- Develop flood emergency response plans (various estimated water levels)
 - for critical assets (at property level by property managers) “private flood plans”.

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Relevance of flood data (Flood protection of property)

- Flood extent
- Flood water depth
- Flood water velocity
- Flood duration
- Flood warning time

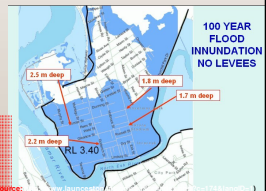
For various annual reoccurrence intervals including the so called 1 in 100 year, 1 in 500 year and PMF.

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Relevance of flood data – Flood Extent (Flood protection of property)

- Visually identify the property
- Visualize water levels “big picture”
- Visualize ingress/egress capabilities



Valuable tool for public education!
1% AEP, 0.2% AEP, PMF etc.

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Relevance of flood data – Flood Extent

(Flood protection of property)

- Visualize ingress/egress capabilities
- Understand availability other services (electricity, sewer etc.)



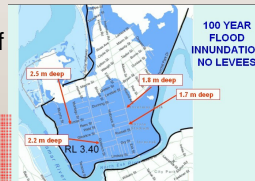
Aerial photo of Wee Wee in flood. Picture: Brian Harvey.
Source: <http://im.dailycamera.com/business/gallery/gallery.asp?royal1229250057003?pages=6>

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Relevance of flood data – Flood Extent

(Flood protection of property)

- Visually identify the property
- Visualize water levels “big picture”
- Visualize ingress/egress capabilities
- Understand availability other services (electricity, sewer etc.)
- Understand limitations of flood levees and other mitigation features.



Valuable tool for public education!
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Relevance of flood data – Flood Depth

(Flood protection of property)

- Determine possible flood water depth associated with gauge heights
- Develop site specific flood emergency response plans

Potential flood inundation at a gauge height of 9.5 m



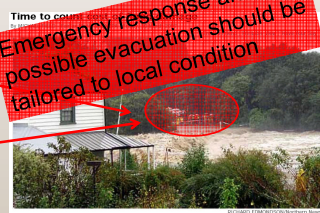
A flood map reach in data will help make rough but educated decisions about likely flood levels along the flood plain and on the premises for various events.

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Relevance of flood data – Velocity

(Flood protection of property)

- Understand likely damage to buildings, structures, landscaping etc.
- Determine suitability of flood emergency protection
- Determine possible emergency response
- Understand evacuation requirements



Emergency response and possible evacuation should be tailored to local condition

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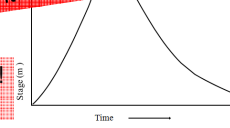
Relevance of flood data – Duration & Warning time

(Flood protection of property)

- Flood duration influences amount of damage to property
- Buildings or structures on raised land need fill material stable when exposed to flood action, including rapid rise and drawdown, prolonged inundation, scour and erosion
- Assist emergency response

Even small actions can make a considerable difference in mitigating flood loss or prevent it completely.

Valuable tool for public education!
 1% AEP, 0.2% AEP, PMF etc.

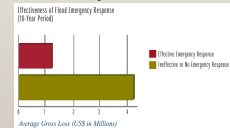


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What can be done to mitigate the residual flood risk to property

Facilities with well-organized (private) flood emergency response plans have reduced their property damage by nearly 70% and have been able to resume operations far sooner than facilities with inadequate or no flood plans in place*

**FM Global loss history*



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What can be done to mitigate the residual flood risk to property

An effective (private) flood emergency response plan heavily relies on :

- Reliable method of warning
- Flood extent maps based on (river) gauge height
- Flood levels/depth maps
- Velocity maps
- Stage hydrographs
- Flood levee failure scenario extent, depth and velocity maps based on (river) gauge height

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What can be done to mitigate the residual flood risk to property

Flood Maps complete the Planning Map picture Information generally existent but buried, inaccessible even to people who commissioned the work:

- Flood extent maps – based on (river) gauge height
- Flood levels/depth maps
- Velocity maps
- Stage hydrographs
- Flood levee failure scenario extent, depth and velocity maps – based on (river) gauge height
- Supporting info: boundary conditions, sensitivity analyses etc.

Such data is generated and forms the basis of flood studies used to develop Planning Maps

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What can be done to mitigate the residual flood risk to property

Flood Maps (info) complete the Planning Map picture

- **Determine in conceptual stage a complex scope and output of the Flood Study/Maps and preserve the data for other users;**
- **Transparent quality flood data is an important factor in educating and offering the opportunity to interested parties to mitigate flood risks.**

- Flood extent maps – based on (river) gauge height
- Flood levels/depth maps
- Velocity maps
- Stage hydrographs
- Flood levee failure scenario extent, depth and velocity maps – based on (river) gauge height

Quality FLOOD INFORMATION assist mitigation of flood losses, through protection of commercial assets and ability to maintain essential services!

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Quality FLOOD INFORMATION assist mitigation of flood losses, through protection of residential and commercial assets, and the ability to maintain essential services!

Thank you!

Questions?

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