

Results of Taipei City Government & citizens working to promote self prevention

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Deputy Director Wu, Chiou-Shiang



Briefing Outline

1

1

Regional environment

2

New thinking on disaster prevention

3

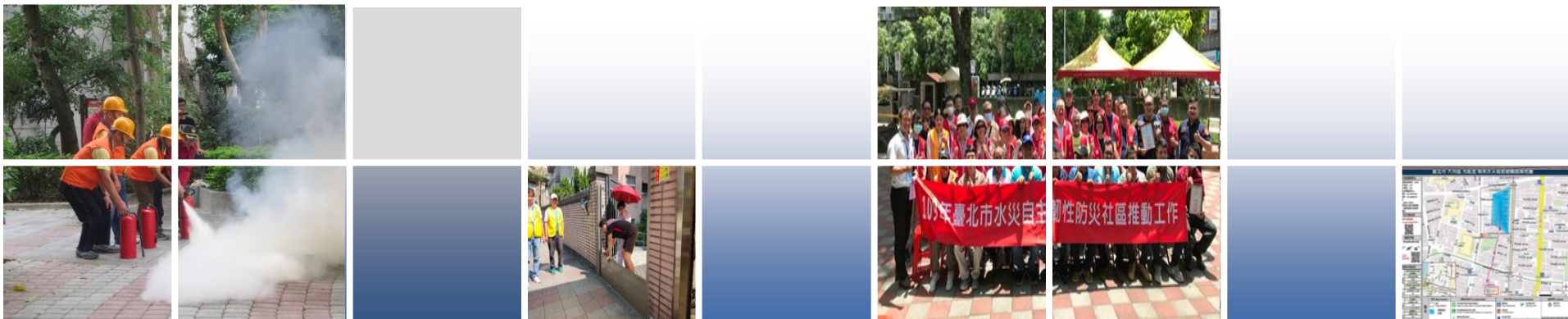
Community promotion of disaster prevention

4

Results & benefits

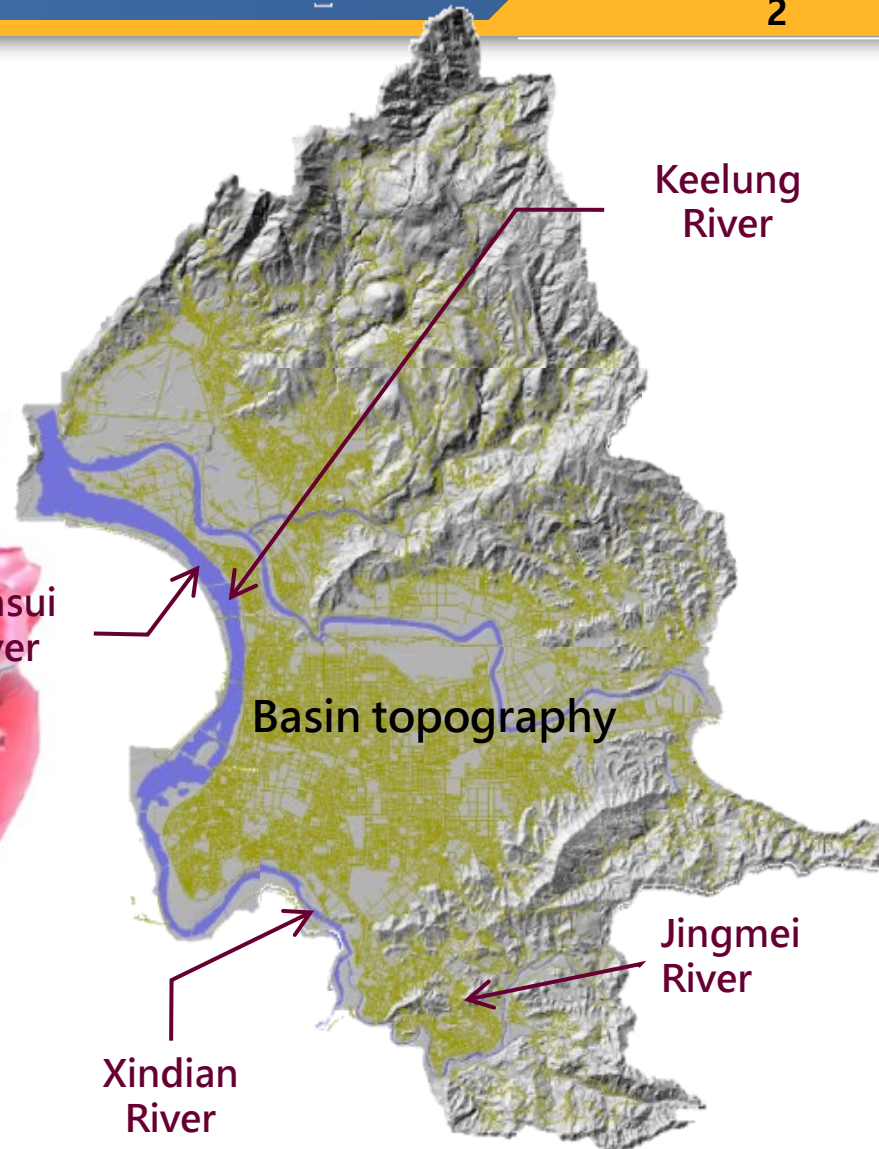
5

Conclusion



■ Local environment

- Surrounded by mountains on North, East, & South sides
- Tamsui & Xindian River flows thru South & West side
- Keelung & Jingmei River runs thru the middle & South side
- Area: km2
 - ✓ 55% hillside
 - ✓ 45% flat land



■ Hydrological environment

- Average annual rainfall: 2,400mm
- Average annual rainfall days: 165
- Rivers' steep slope flows are highly concentrated

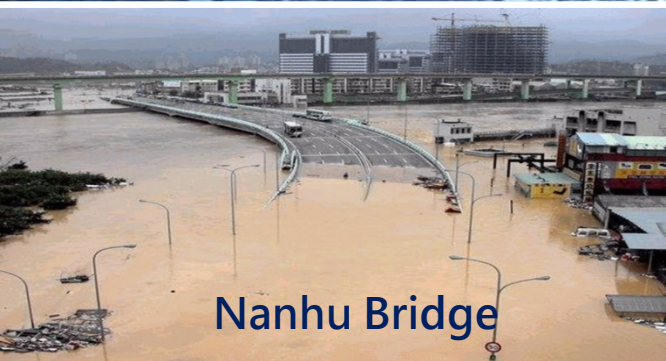
1 Regional Environment

Typhoon flooding

3



Depth 0.5m~1.0m



Nanhu Bridge



Flooding in MRT

九十年九月十七日
納莉颱風淹水高度
Flood Level on Sept.17, 2001
due to Typhoon Nari
↑ 236 cm

2001 Typhoon Nari disaster



Keelung
River

- Max hourly rainfall: 148.5mm/hr
- Flooded area: 43km²

3

2012 Saola & 2015 Soudelor



2012 Typhoon Saola Tamsui River



2015 Typhoon Soudelor Tamsui River



2012 Typhoon Saola Xindian River



2015 Typhoon Soudelor Xindian River

1 Regional Environment

Torrential rain

5

6/17/2016 torrential rain

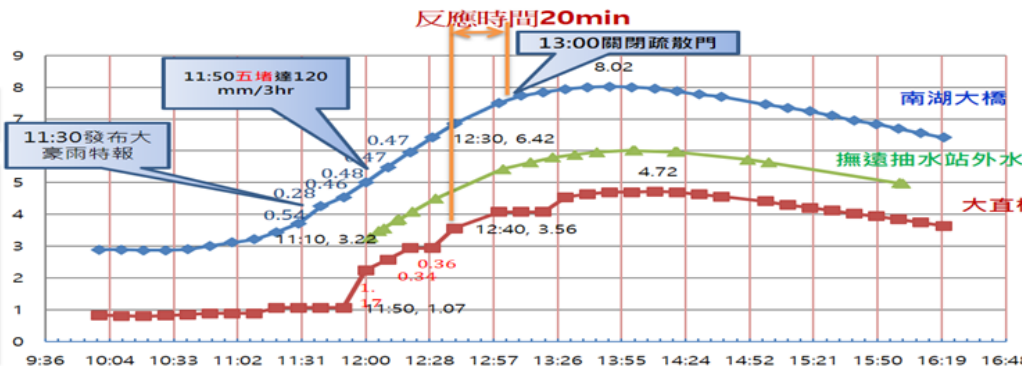
- Max rainfall : 114 mm/hr.
Jiuzhuangli
Neighborhood 32 mm/10mins

7/22/2019 torrential rain

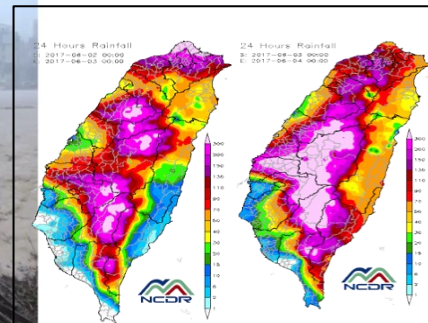
- Max rainfall : 136.5mm/hr.
30.5mm/10mins

- Taipei City rain gutter maintenance standard:
78.8 mm/hr.
13.1 mm/10mins

06/02/2017 torrential rain



基隆市基金一路上午淹水，一輛計程車險遭滅頂，幸好乘客與司機緊急從車窗爬出。(民眾提供)

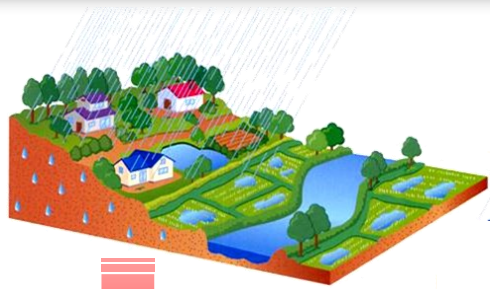


6/2~3 24hr rainfall map

項次	河川	監測站名稱及3級警戒水位(公尺)	達3級警戒時間	達高灘地時間	最高水位(公尺) 發生時間	水位上升速率(公尺/小時)	蘇拉颱風最高水位(公尺)	蘇迪勒颱風最高水位(公尺)
1	基隆河	南湖大橋6.4 (高灘地7.6)	12:30	13:10	8.02 13:50	2.51	7.57	7.52
2	基隆河	撫遠抽水站 (基6堤外停車場6.25)	-	-	6.01 14:50	2.14	6.04	6.04
3	基隆河	大直橋3.3 (高灘地4.0)	12:40	13:30	4.72 14:10	2.9	4.76	4.81



Kee 11 evacuation door
River rises & floods
high beach



Dense urban development



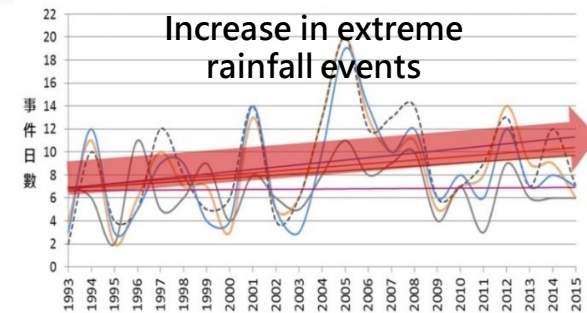
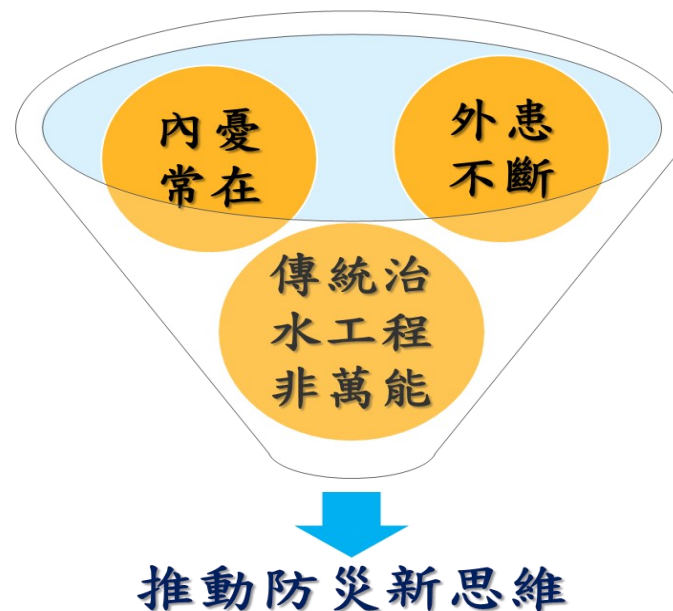
runoff increases & subsequent drainage expansion is difficult to carry out



Yuanshanzi Flood Diversion Project

Facing the challenge of climate change
Flood symbiosis ,
flood resilience
Flood warning disaster
self-prevention

韌性宜居城市政策



7/22/2019 Zhongxiao E. Road section 4



2015 Typhoon Soudelor
Tamui River



Public-private cooperation,
community disaster self prevention
face

Self help → help others → public help
= 7 : 2 : 1

line



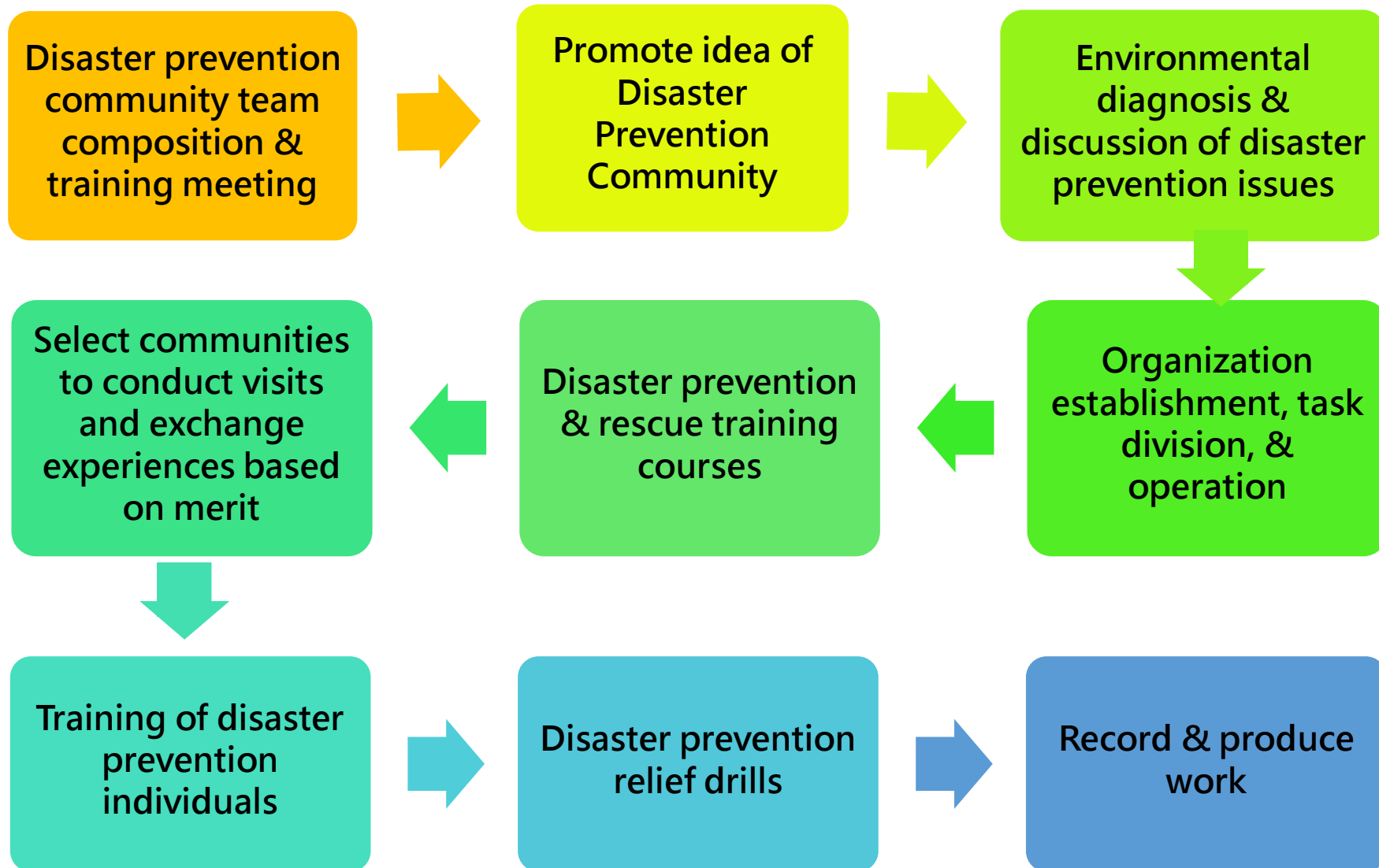
spot

Storm experience center

Water Control
Experience Park



Riverside volunteers



Understand disaster prevention community

Listen & watch carefully to understand the disaster prevention community

Know what to do next

This is just the beginning, the team will accompany you in the future

Those who know how to give are the most blessed

Everyone is responsible for protecting their home & neighborhood



Everyone looks for trouble!

Open your eyes and look for it. Where is the danger in the community?

Understanding the community and environmental inspection

Who is faster than me?

Open your eyes, get moving, where do I live?

Mark the environment map (home and disaster site)

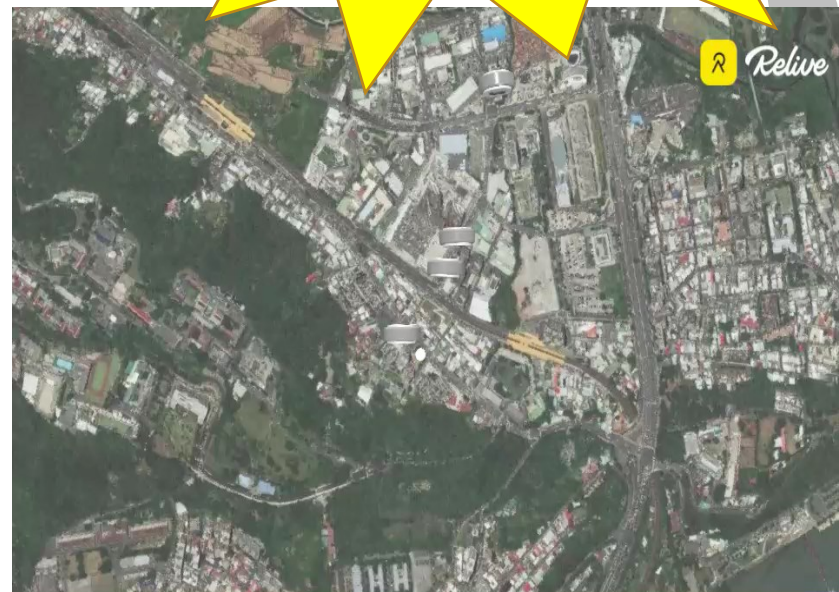
Share!

I know all the community dangers. Let me tell them to you

Share environmental map marking results



Use technology to produce real-time environmental survey videos



Use your head

Think about how to prevent disasters
Research disaster countermeasures

Must know

What do I do when disaster strikes?
Refuge center

Share!

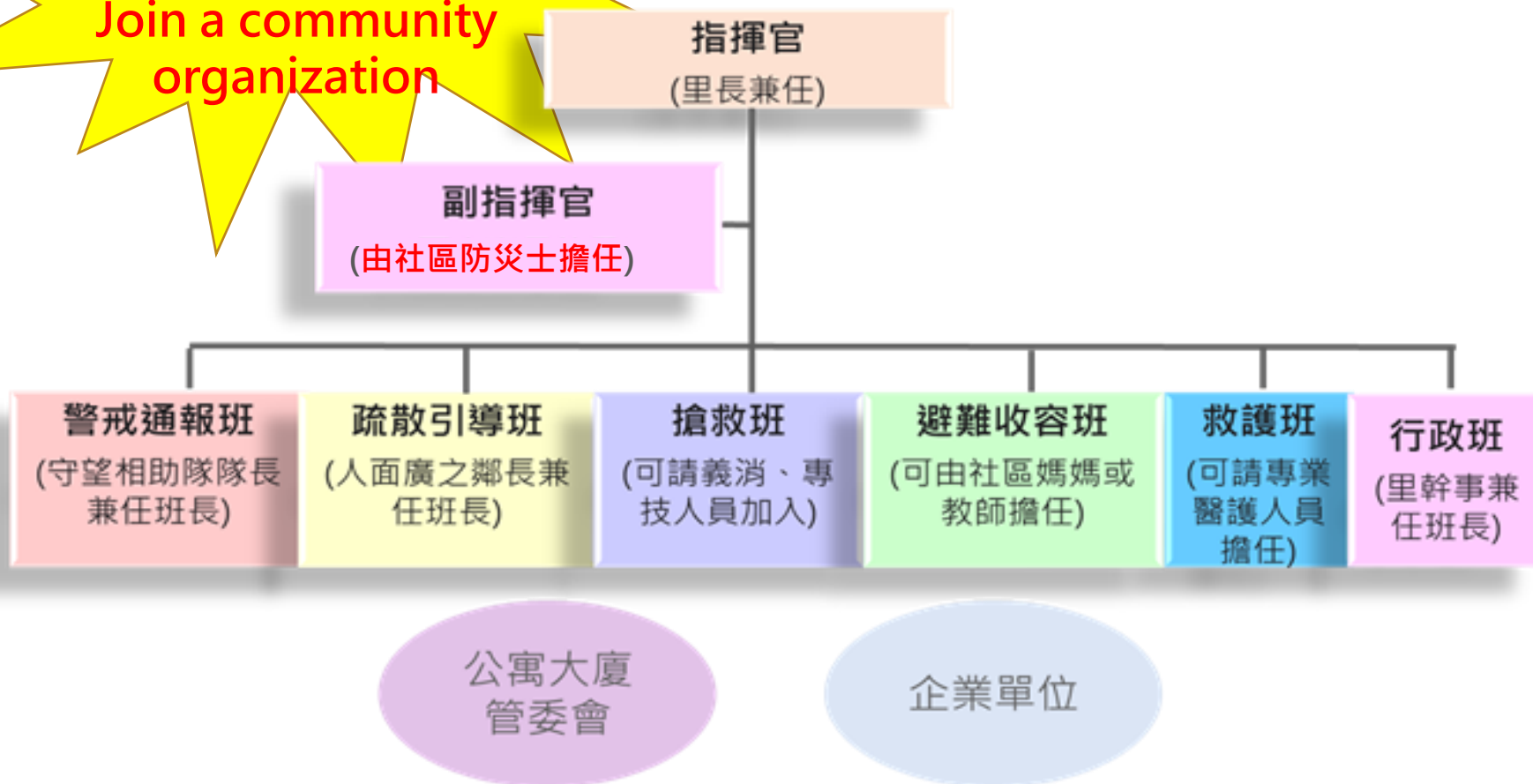
I know all the countermeasures, let
me share them with you
Share discussion results



Train disaster prevention personnel
Join a community organization

Organize, have a plan, prepare for changes

Be prepared for changes in disaster prevention and relief projects



You can't predict disasters

What should I do when disaster strikes?

Home Disaster Prevention Course
(Fire, Earthquake)

Learn to save yourself and others

Follow me to do this, it's not hard to
save yourself and others

CPR, AED, dressing, fire extinguisher

Backpack and maps are essential

Be prepared during ordinary times &
don't panic when a disaster occurs

Introduction of disaster prevention
backpack and map



Emergency CPR, AED



臺北市 松山區 中華里 簡易水災疏散避難路線地圖

災害通報單位

市民當家熱線電話：1999
消防局 電話：119
警察局 電話：110
松山區災害應變中心
平時電話：02-87878787
災時電話：02-66150119
里幹事
電話：0936-719193
註：請電洽本區災害應變中心，確認避難收容處所是否開設

防災資訊網

臺北市防災資訊網
www.eoc.gov.taipei/EOC/



避難原則

水災：垂直避難或預先撤離
地震：

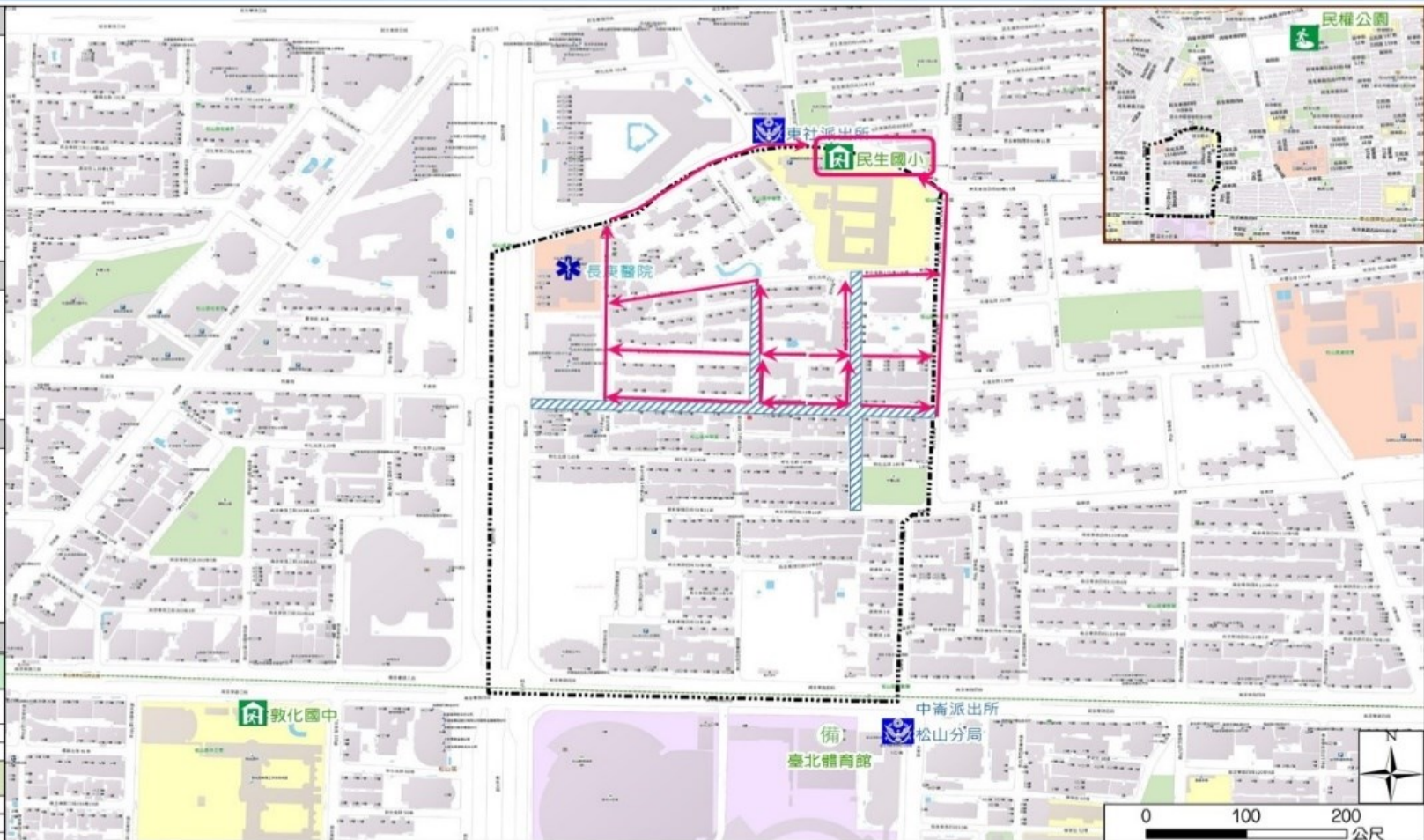


臺北市
市民防災手冊



避難收容處所

名稱	民權公園(防災公園) 適用震災
地址	民權東路四段、民權國小附近
容納人數	2,465
連絡電話	02-25850192
名稱	民生國小(優先安置) 適用水災
地址	敦化北路199巷18號
容納人數	70
連絡電話	02-27122452轉830
名稱	敦化國中(優先安置) 適用水災
地址	南京東路三段300號
容納人數	389
連絡電話	02-87717890轉50
名稱	臺北體育館
地址	南京東路四段10號
容納人數	1,000
連絡電話	02-25702330轉6511



圖例

里界 Village Boundary	避難收容處所 Evacuation Shelter	防災救災單位 Disaster Rescue Resources	重要地標 Landmark
里界 Village Boundary 易積水地區 Flood-prone 水災避難路線方向	室內避難收容處所(優先安置學校) Indoor Evacuation Shelter (School for Priority Shelter) 室外避難收容處所(防災公園) Outdoor Evacuation Shelter (Disaster Prevention Park) 避難收容處所(備用) Evacuation Shelter (Backup)	警察單位 Police Department 消防單位 Fire Department 急救責任醫院 Designated Hospital (Emergency Medical Treatment) 直升機起降場 Helicopter Pad	重要地標 Landmark 臺北市政府工務局水利工程處 109年6月製作



Heping Neighborhood **Chungyuan** self help association providing hot meals for victims



Zhonghua neighborhood providing **Jixing** transportation to assist evacuations

Characteristics of Taipei City Disaster Prevention Community



Kuoyang Tire Co. assists in setting up flood gates in Dahu Neighborhood



ASUS providing venues and **Tzu Chi** providing tents in Yide Neighborhood



Walk around & take a look

Teach others & learn from others



Commander Wu of Yilan's Meizhou Disaster Prevention Team sharing his experience



Visit to Meizhou community to learn environmental disaster prevention operations



Visit to Taoyuan Shulin Neighborhood's lotus flood ponds



Ten situational exercises



Preparatory meeting



Discussion of plan

演練項目	演練狀況	演練內容
平時減災	【演練狀況一】	平時減災：清溝、巡勘、發防汛檢核表， 落實自主防災檢查
災前整備	【演練狀況二】	災前整備：自主防災社區 動員整備 與 任務說明
	【演練狀況三】	災前整備：里長進行 警報發布 與提醒住戶 豪雨預備
災中應變	【演練狀況四】	災中應變：松山區災害 應變中心成立 、中華里自主防災社區 應變小組任務說明
	【演練狀況五】	災中應變： 防水閘門的操作 、 沙包的堆疊
	【演練狀況六】	災中應變： 路樹倒塌 ，影響救援通道
	【演練狀況七】	災中應變：部分路段已開始積淹水， 疏散引導 居民，強制撤離
災後復原	【演練狀況八】	災中應變： 避難收容處所開設 ，地震發生，民眾暈倒， 急救
	【演練狀況九】	災後復原： 發電機 、 抽水機 操作
	【演練狀況十】	災後復原：解除豪雨特報，收容民眾返家、 環境清潔及復原

Must keep up
disaster prevention drills

in case of emergencies



Self disaster prevention community
prepare before disaster



Erecting flood gates



Removal of fallen trees

Ten situational exercises:
well executed self-disaster prevention ensures a safe home



ditch cleaning and normal preparation



Prepare before disaster



Collect sandbags



Response team established



Operating flood gates



Stacking sandbags



Evacuation



Shelters open



Earthquake response



CPR · AED



Clearing fallen trees



Operating generators & pumps

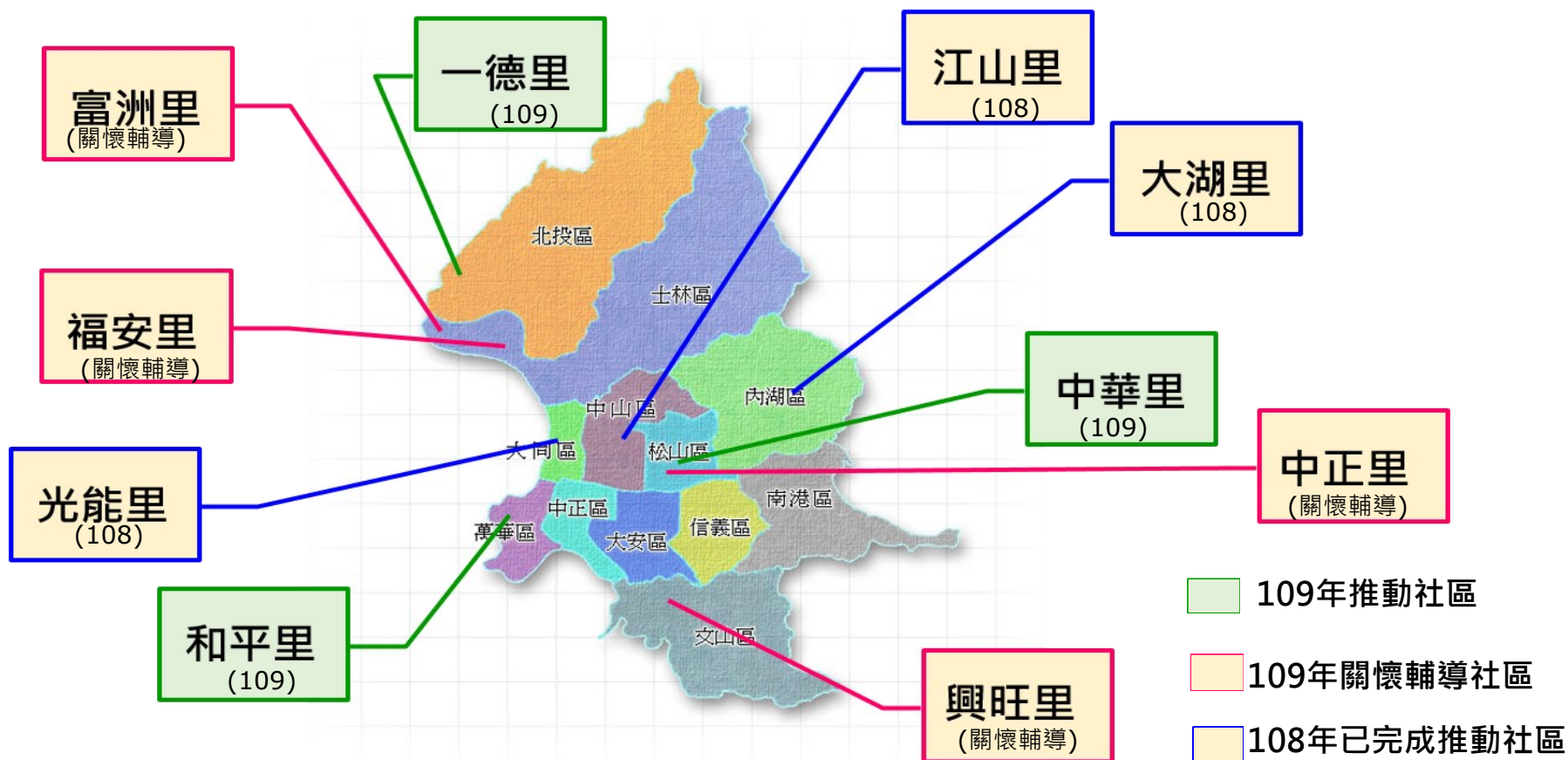


Shelter residents going home

3 independent and resilient flood communities:

Zhonghua, Heping, and Yide neighborhoods

7 care and counseling communities: Dahu, Guangneng, Jiangshan, Fu'an, Fuzhou, Xingwang, Zhongzheng neighborhoods





Taipei City
Disaster
Prevention
Community
Characteristics



<https://sites.google.com/g.ntu.edu.tw/taipei-fdrc>

Website and QR code of
"Taipei Flood Resilient Community Portal"



- Dahu Neighborhood builds a community info website: **"Dahu community network"**.

- Disaster mitigation and response during normal times, refer to information during emergency situations.

- **Water information** related to disaster resilient communities.

- **Flood rescue operation mechanism, community disaster prevention map.**

<https://sites.google.com/a/g.ntu.edu.tw/fdrc-dahu/home>

- Strengthen disaster reduction during normal times, pre-disaster preparation, response during disaster, and post-disaster recovery.

- Acquire disaster prevention knowledge, reduce property losses caused by disasters.

Dahu community disaster prevention
Information site URL and QR code



Guangneng Neighborhood response team

Disaster Shelter

光能里應變小組

透過臺北市政府工務局水利工程處108年水災自主韌性防災社區推動工作計畫於社區推動，光能里成立防災應變小組，組織名單如下。

指揮官 陳里長靜芳
行政班(班長)-呂美珠
警戒通報班(班別)-鄭天行
疏導引導班(班別)-游宛崙
搶救班(班長)-陳俊源
救護班(班長)-張子真
避難收容所(班長)-張玉鳳
防災士-呂美珠里幹事、鄭天行、莊玉美

Team members

Police & Fire units

警消單位

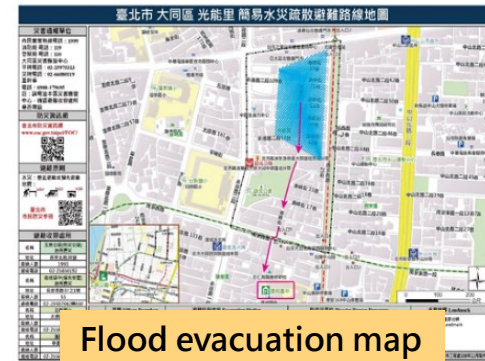
警察單位:
機關名稱:臺北市政府警察局大同分局建成派出所
地址:103臺北市大同區承德路一段80號
電話:02 2558 5463

消防單位:
機關名稱:臺北市政府消防局第四大隊大同中隊建成分隊
地址:103臺北市大同區承德路二段35號
電話:02 2559 3748

Police & Fire Contact Information

避難收容場所

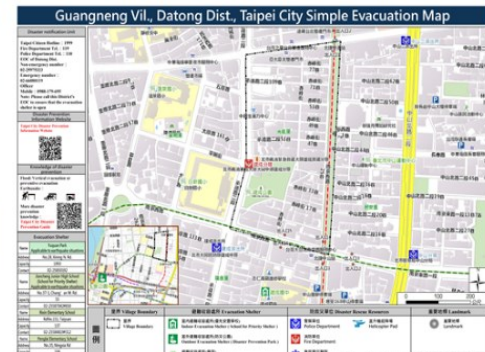
光能里易淹水區為赤峰街一帶，水災避難收容場所為建成國中，該校警衛室內備有AED，亦有活動中心適合避難收容，光能里簡易水災疏散避難路線地圖詳右圖，疏散避難地圖中英文版如下圖。



Flood evacuation map



Disaster evacuation map



English evacuation map

Joint disaster revention drill

- Improve community resilience and disaster prevention
- 5/28/2020 Dahu Neighborhood participated in the "Taipei Disaster Prevention and Resilient Community Shelter and Operation Workshop"
- Joint disaster prevention drills with Tzu Chi Charity Foundation, Taipei Neihu District Office, and Neihu Lekang Neighborhood



Deputy Mayor Huang takes a group photo with Dahu Neighborhood



Tzu Chi introduces shelter



Everyone assembles



Dahu Neighborhood assembles



Deputy Mayor Huang issued a certificate of appreciation to Dahu Neighborhood

Dahu neighborhood using Line to issue information

重點提醒

- 鋒面將於今(10)日至明(11)日逐漸南移至北臺灣後南北擺動，並將影響至14日白天，14日晚間起鋒面移至巴士海峽，對臺灣影響減少。
- 依目前模式預報評估：10至13日鋒面及西南氣流影響期間，本市最顯著降雨時段在11日全天、13日白天至14日上午，預估最大日雨量有機會達140至180毫米。
- 梅雨鋒面影響期間，易有中小型對流系統移入，並帶來瞬間強降雨，最大時雨量可達40毫米以上，三小時雨量則可達100毫米以上（豪雨以上），而中小尺度之系統預報不易掌握，需即時守視預警，請隨時留意本團隊提供之天氣訊息。

11日滯留鋒面影響天氣提醒



※定量降水預報參考氣象局區域模式，由於鋒面位置仍具不確定性，圖例將持續滾動式修正，請隨時關注最新天氣資訊。

圖：大氣團隊

社區

針對氣象局預報颱風豪雨或致災性強降雨的應變措施

- ◆ 執行方式：社區管理員於值班時段，請依照下列步驟完成，以期將災害降至最低。

◇ 颱風、豪雨、強降雨 前：

- 巡查並移除中庭各排水孔落葉、雜物確保暢通。
- 檢查喇叭、手電筒、廣播器有電及測試正常，備妥雨具及排水孔疏通鐵杆。

◇ 颱風、豪雨、強降雨 中：

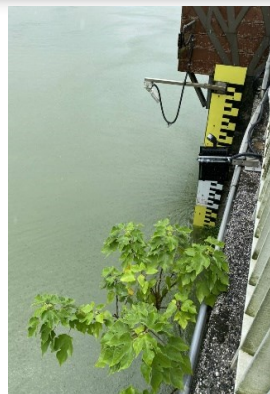
- 請密切注視監視器(水閘門外路面水位)及中庭排水孔蓋落葉。
- 必要時，關閉車道水閘門，並在 LINE 群組拍照通報。
- 緊急時，廣播器及吹哨子警告住戶。並在 LINE 群組拍照通報。

◇ 颱風、豪雨、強降雨 後：

- 請依照「大湖芳庭社區巡查表」執行、查看、紀錄存查。
- 發現異常時通知主委。



Dahu Neighborhood 8/3 Typhoon Hagby monitor water conditions



大湖里 accumulative rainfall 的燈號

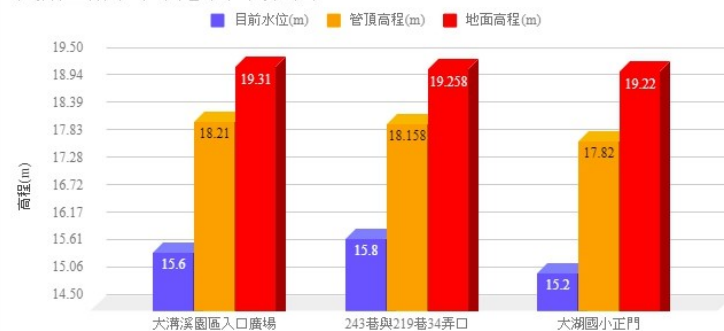
觀測時間：2020/8/3 下午 12:10:00

時雨量 (mm)	大湖里站 (1040公尺) (大地工程處)	碧湖國小站 (888公尺) (水利工程處)	安泰里站 (1400公尺) (大地工程處)
警戒燈號	12.5	45	16.5
: 時雨量小於40毫米之降雨，不會發生淹水災害 : 時雨量大於50毫米，部份下水道管線水位已接近滿管 : 時雨量大於70毫米，下水道管線水位已接近地表，即將從人孔冒出，有立即淹水之危險			

滿溢地表百分比(%)



大湖里雨水下水道水位高程圖



中午12:27

國家災害防救科技...

UPDATE 內湖:二級

水利署訊:臺北市內湖區淹水二級警戒(內湖站1小時雨量60mm),如持續降雨轄內易淹水村里及道路可能3小時內開始積淹水(如:內湖區-五分里,港富里,湖興里,安湖里,金龍里,湖濱里,瑞陽里,三重里,內溝里,石潭里,湖元里,蘆洲里,碧山里,大湖山莊街一帶,內湖路),建請即時注意淹水通報及應變,低窪地區及道路請特別注意防範積淹水。

影響範圍
臺北市

大湖公園平面配置圖



Dahu 8/22 prepares For Typhoon Bavi



Checking flood gates



Work division before the disaster



Closing flood gate



Placing sandbags

8/27 torrential rain inspection



Zhonghua Neighborhood Inspection of stagnant water



Yide Neighborhood inspection protect residents



Inspecting Dagou Creek in Dahu

4

Results and benefits

Participate
inevaluation
29

Participate in the Water Resources
Department evaluation and become
an indicator community
Assist the central and local
governments in joint flood control



時間	議程	主講者
13:30~13:50	各單位報到	
13:50~14:00	開場致詞	經濟部水利署代表
14:00~14:10	問卷填寫(前測)	
14:10~14:50	評鑑制度內容說明與系統教學	國立臺灣大學 洪五爵 博士
14:50~15:40	撰寫新聞稿	TVBS 戴元利 記者
15:40~15:50	問卷填寫(後測)與休息時間	
15:50~16:20	績優社區分享防災經驗	績優社區代表
16:20~16:50	績優社區分享防災經驗	績優社區代表
16:50~17:30	綜合討論與建議	
17:30	結訓	

Explanation and teaching of evaluation system content

7/5 Taoyuan Intensive Training Camp Agenda

Share information

Disaster prevention is more important than disaster relief, and disaster prevention is better than disaster preparation

Promote independent disaster prevention, joint learning and water symbiosis



Typhoon rain strikes one after another
Public-private cooperation is the best
disaster prevention for all

A 3-minute promotional video for disaster prevention

<https://youtu.be/AmDBBImqTME>

THE END

Thank you!

