

**Impact Matrix for emergency management:
Rainfall**

| Minimal Impact | Minor Impacts | Significant Impacts | Severe Impacts |
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| <p><u>Transportation</u></p> <p>Wet roads and higher likelihood of accidents</p> <p>Localized disruption to traffic</p> | <p>Localized pooling and flooding of roads</p> <p>Occasional accidents and associated disruptions and increased travel times</p> <p>Minor public transportation disruptions</p> | <p>Localized flooding and damage of roads with significant delays and disruption to traffic</p> <p>Accidents and associated disruptions and increased travel times</p> <p>Significant disruptions to public transportations</p> | <p>Widespread flooding and damage of roads with dangerous driving conditions</p> <p>Multiple accidents and associated disruptions and increased travel times</p> <p>Most public transportation significantly delayed</p> |
| <p><u>Land slippage/landslides</u></p> <p>Isolated land slippage</p> | <p>Localized land slippage – limited debris flow on roads</p> | <p>Localized land slippage resulting in road closures and property damage – significant debris flow (rocks and trees)</p> | <p>Land slippage resulting in road closures and property damage and communities cut off</p> |
| <p><u>Stream/water course flooding</u></p> <p>Minor ponding on low lying areas</p> | <p>Localized flooding and/or ponding in low-lying flood prone areas</p> | <p>Possible life threatening flash flooding of vulnerable areas</p> | <p>Life threatening, extensive flash flooding of vulnerable areas</p> |

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| | | <p>Swift and swollen water courses</p> <p>Debris laden water courses</p> <p>Significant flooding in low-lying areas</p> | <p>Overtopping water courses</p> <p>Debris laden water courses</p> <p>Severe flooding in low-lying areas with large areas underwater</p> |
| <p><u>Urban and Overland Flooding</u></p> <p>Minimal overland flooding</p> | <p>Localized flooding of properties (enhanced by high tide due to slower draining)</p> | <p>Localized flooding of properties and communities (enhanced by high tide due to slower draining)</p> | <p>Widespread flooding of properties and communities (enhanced by high tide due to slower draining)</p> |
| <p><u>Ground water</u></p> <p>Minimal impact to wells</p> | <p>Limited impact to previous saturated wells</p> | <p>Saturated wells</p> | <p>Overflowing wells</p> |
| <p><u>School</u></p> <p>Minor disruption of school activities</p> | <p>Localized disruption of school activities</p> | <p>National disruption of school activities.</p> | <p>Possible closure of schools</p> |

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| <p><u>Hospital/Health Services</u></p> <p>No disruption to health services expected</p> | <p>Possible disruption to health services expected</p> | <p>Significant disruption to health services expected</p> | <p>Severe disruption to health services expected</p> |
| <p><u>Airport operations</u></p> <p>No impacts on airport operations</p> | <p>Minor impacts on airport operations; a few flights delayed or canceled. Flight operations is depends on airlines</p> | <p>Temporary or partial closure of airport</p> <p>Significant impacts to flight operations. Incoming flights could be delayed or diverted depending on airline operation criteria. Departures can be delayed because of water on runway.</p> | <p>Total closure of airport</p> <p>Major impact to flight operations. Flights significantly delayed or cancelled due to water on runway and limited visibility conditions</p> |
| <p><u>Tourism/economic impacts</u></p> <p>Minimal to no impact to tourism, businesses, etc.</p> | <p>Minor impact to tourism (canceled tours), business, operations, etc.</p> | <p>Significant disruption to economic activities</p> <p>Significant impacts to tourist activities, business operations, social and sporting events.</p> | <p>Severe disruption to economic activities</p> <p>Severe impacts to tourist activities, daily operation, social and sporting events. Disruption can last weeks to months</p> |

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| <p><u>Drainage</u></p> <p>Minimal impacts to drains</p> | <p>Minor clogging of drains due to debris flows in drainage areas</p> | <p>Significant clogging of drains due to debris flows in drainage areas</p> | <p>Extensive clogging of drains due to debris flows in drainage areas</p> |
| <p><u>Discharge/shoreline</u></p> <p>Minimal impacts to stream discharge at stream mouths</p> | <p>Minor impacts to stream outflow with shifting sand – minor impacts to beach erosion and water backup at outflow locations</p> | <p>Significant impacts to stream discharge – movement of sand/beach erosion and backup of outflow of streams</p> | <p>Severe impacts that result in reduced discharge flow, significant beach erosion</p> |
| <p><u>Renewable Energy</u></p> <p>Solar energy operation not impacted</p> | <p>Minor disruption to solar energy output</p> | <p>Significant disruption to solar energy output</p> | <p>Severe disruption to solar energy output</p> |
| <p><u>Communications</u></p> <p>Minor impacts to phone and internet communications</p> | <p>Intermittent outage to phone and internet communications</p> | <p>Significant impacts to phone and internet communication – bandwidth saturated</p> | <p>Severe impacts to phone and internet communication – bandwidth saturated</p> |
| <p><u>Fire and emergency responders</u></p> | <p>Minor impact to emergency services</p> | <p>Significant impact to emergency services</p> | <p>Severe impact to emergency services. Assets (fire trucks, ambulance, etc.) may need possible relocation to higher ground. Emergency</p> |

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| <p>No impact emergency services</p> | | | <p>response might not able to reach emergency situations due to flood or debris on roads</p> |
| <p><u>Port operations</u> Port operates as usual</p> | <p>Minor impact on port operations. Small watercraft need to be secured or taken ashore</p> | <p>Significant impact to port operations. Containers need to be secured, small watercraft need to be taken out of the water, cranes secured</p> | <p>Sever impacts – port could close or operations significantly reduced. Large ships will need to leave port. Small watercraft have to be taken out the water. Container load/unload operations maybe reduced or stopped and equipment secured</p> |
| <p><u>Agriculture</u> No impact on agriculture operations</p> | <p>Minor impact on agriculture operations – move at risk animals (e.g., chickens) to shelter</p> | <p>Significant impact to agriculture – secure livestock and move small animals to shelter. Some loss of crops in flood or soil erosion prone areas</p> | <p>Severe impact on agriculture – loss of livestock and significant loss of crops due to flooding and soil erosion – impact on economy and livelihoods</p> |