STANDARD OPERATING PROCEDURES IN NATIONAL MULTI HAZARD EARLY WARNING CENTER

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Civil Aviation Authority – OMAN

November / 2023

CONTENT

- Importance of SOP
- Standard Operating Procedures in managing Severe weather cases
- Taken actions in different weather conditions, according to their effects and expected damages

IMPORTANCE OF SOP

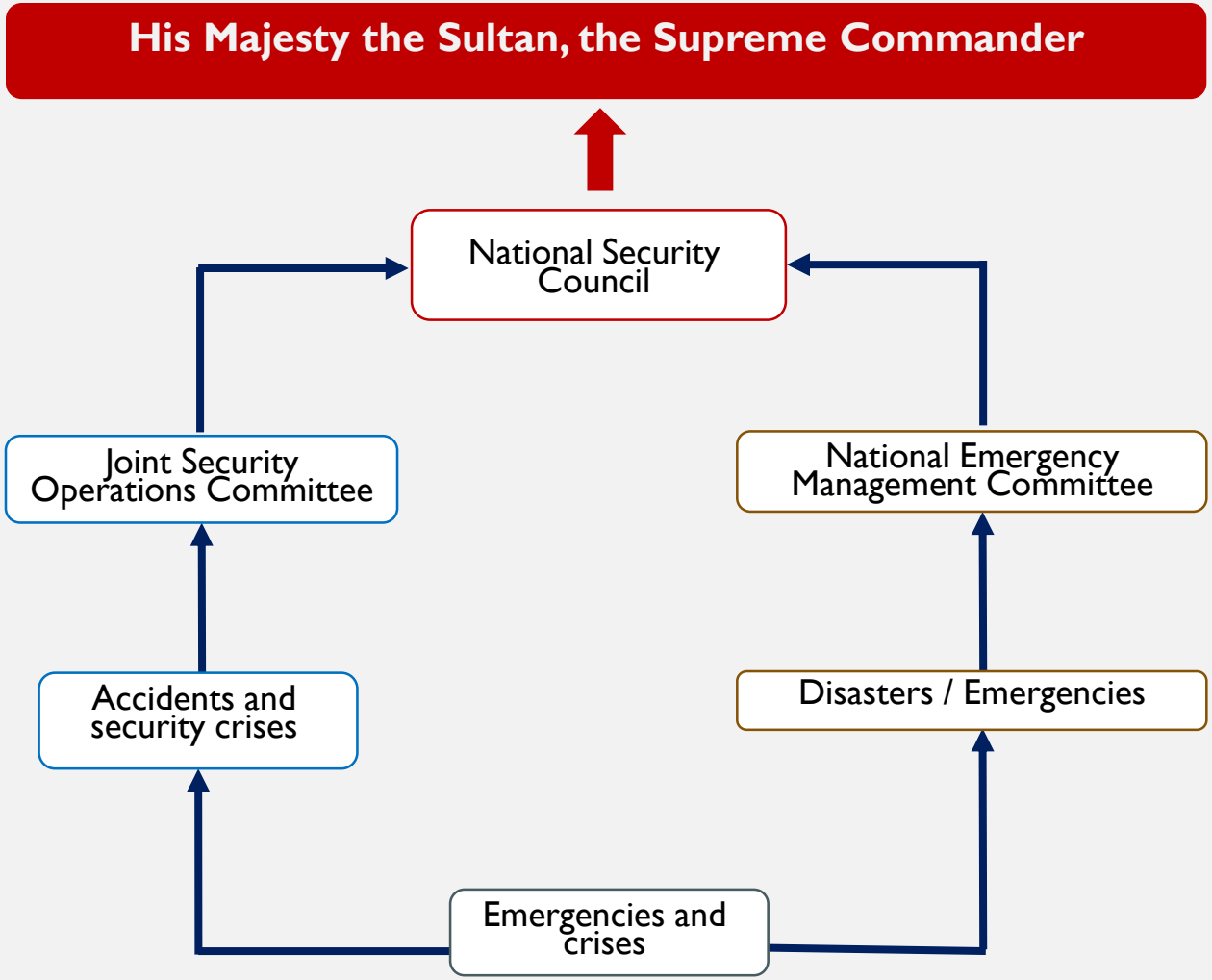
Scientific progress in the field of forecasting has made it possible to provide unprecedented warnings with their accuracy in a time limit that achieve the objectives of the NMHEWS, contribute to the safety of life and mitigate damage to property.

Forecasting impacts enables governments, economic sectors and the public to take appropriate action through information that shows how weather hazards will affect their lives, property and livelihoods.

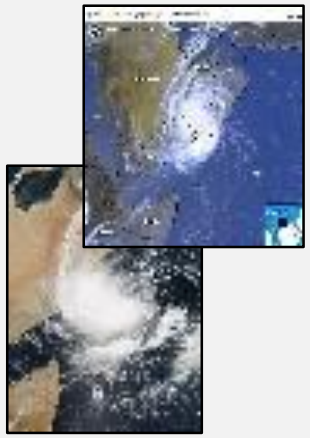
IMPORTANCE OF SOP

The third version of the SOP for the NMHEWS aims in an effort to improve forecasting and early warning services based on impacts, by ensuring the arrival of appropriate information that helps the public and the committees emanating from the National Emergency Management Committee to respond optimally during exceptional weather situations to ensure the main goal in preserving lives and the gains of the homeland and property.

EMERGENCY:


His Majesty the Sultan, the Supreme Commander
National Security Council
Joint Security Operations Committee
National Emergency Management Committee
Accidents and security crises
Disasters / Emergencies
Emergencies and crises

STANDARD OPERATING PROCEDURES IN MANAGING SEVERE WEATHER CASES



- Started in 2004 at the DGMET after MAY 2002 Dhofar tropical cyclone.
- It showed the steps for the forecasters to issue a general weather warning by the meteorology department.
- It included the role of every personal during the times of weather extreme events.
- Updated in 2009, 2012, 2016, 2020.
- Added some flow charts, criteria, intensity tables, steps, documentation of ISO 9001/2015.
- Added new bulletin samples and some stakeholders reports samples.

TAKEN ACTIONS IN DIFFERENT WEATHER CONDITIONS, ACCORDING TO THEIR EFFECTS AND EXPECTED DAMAGES

الحالات الجوية	التصنيف	الأضرار المتوقعة	الاجراءات المتخذة
الحالات المدارية	منخفض مداري	• رياح نشطة إلى شديدة السرعة (17 – 27) عقدة تحرك أغصان الاشجار مثيرة للأمواج والاتربة. • أمطار متوسطة تسبب جريان الأودية بشكل متوسط والشعاب تشكل البرك المائية. • حالة البحر من متوسط إلى هائج الموج (2.0 – 3.5 أمتار) تشكل خطورة على قوارب الصيد الصغيرة والصيادين ومرتادي البحر.	• إبلاغ رئيس اللجنة إدارة الحالات الاستثنائية. • إتباع جدول مراحل التحذير • التنسيق مع المكتب التنفيذي اللجنة الوطنية الحالات الطارئة. • التنسيق مع الهيئة العامة للإذاعة والتلفزيون. • إبلاغ رئيس اللجنة الداخلية لإدارة الحالات الاستثنائية.
	منخفض مداري عميق	• الرياح الشديدة إلى شديدة جدا (28 - 33) عقدة تدمر المحاصيل الزراعية وتكسر أفرع الاشجار وتطاير المواد غير ثابتة. • الأمطار الغزيرة تسبب الفيضانات على المناطق المنخفضة. • الأمواج عالية (3 – 4 أمتار) تشكل خطورة على قوارب الصيد والصيادين واحتمال امتداد مياه البحر إلى الساحل.	• تفعيل اللجنة الداخلية لإدارة الحالات الاستثنائية في حالة اتخاذ القرار بإصدار الاشعار • إتباع جدول مراحل التحذير • دعوة المكتب التنفيذي اللجنة الوطنية لإدارة الحالات الطارئة للاجتماع في حالة إصدار الاشعار. • التنسيق / الربط المباشر مع الهيئة العامة للإذاعة والتلفزيون.
	عاصفة مدارية	• رياح شديدة جدا (34 – 63) عقدة تدمر المحاصيل الزراعية وتكسر أفرع الاشجار وتطاير المواد غير ثابتة. • الأمطار الغزيرة تسبب الفيضانات على المناطق المنخفضة. • الأمواج عالية (4 – 6 أمتار) تسبب فيضانات بالقرب من المناطق الساحلية والارصفة.	• تفعيل اللجنة الداخلية لإدارة الحالات الاستثنائية قبل إصدار الاشعار. • إتباع جدول مراحل التحذير • دعوة المكتب التنفيذي اللجنة الوطنية لإدارة الحالات الطارئة للاجتماع عند إصدار الاشعار. • الربط المباشر مع الهيئة العامة للإذاعة والتلفزيون.
	إعصار مداري	• رياح شديدة جدا (64 أو أكثر) عقدة تؤدي إلى اقتلاع كامل للأشجار وتدمر المحاصيل الزراعية وتحطم نوافذ وأبواب المباني. • الأمطار الغزيرة جدا المستمرة تسبب الفيضانات على المناطق المنخفضة. • الأمواج العاتية (4 – 10 أمتار) قد تدمر الادوار السفلى للمباني القريبة من السواحل والمناطق المنخفضة بسبب الفيضانات وارتفاع مستوى الامواج. • وقد تدمر الأمواج والفيضانات المباني القديمة والصغيرة والمبنية بالمواد غير ثابتـــــة والمباني المنشئة غير المكتملة.	• تفعيل اللجنة الداخلية لإدارة الحالات الاستثنائية قبل إصدار الاشعار. • إتباع جدول مراحل التحذير • دعوة المكتب التنفيذي اللجنة الوطنية لإدارة الحالات الطارئة للاجتماع عند إصدار الاشعار. • الربط المباشر مع الهيئة العامة للإذاعة والتلفزيون

WEATHER PARAMETER CLASSIFICATIONS ACCORDING TO THE COLORS

n	Wind Type	Wind Speed
1	Light wind	5 – 12 Knots
2	Moderate winds	13 – 18 Knots
3	Active wind	19 – 24 Knots
4	Strong wind	25 – 31 Knots
5	Very strong winds	32+ Knots

Precipitation (mm) 24 hours / wind (knot)	< 20	20 - 30	70 - 31	> 70
<25	Green	Yellow	Orange	Red
39 - 25	Yellow	Yellow	Orange	Red
60 - 40	Orange	Orange	Orange	Red
> 60	Red	Red	Red	Red

Weather SOP

Tropical cyclone

n	Warning stages	Tropical cases
1	Weather bulletin	1. In the case of a tropical depression formation (17-27 knots) in the Arabian Sea. 2. Renewed every 48 hours. 3. A serial number and a release number are given.
2	Weather watch	1. It is issued 72 hours before the direct impact of the situation on the coastal areas of Oman and is renewed every 24 hours. 2. A serial number and a release number are given. 3. The Committee meets with the Department of Exceptional Weather Conditions. 4. Invite the Executive Office of the National Emergency Management Committee for a meeting.
3	Weather Alert	1. It is issued 48 hours before the direct impact of the situation on the coastal areas of Oman and is renewed once every 12 hours. 2. A serial number and a release number are given.
4	Weather warning	1. It is issued 24 hours before the direct impact of the situation on the coastal areas of Oman and is renewed once every 6 hours. 2. A serial number and a release number are given.
5	Warning end bulletin	Issued after the case has been confirmed to have ended (the risk of direct impact of the case has disappeared)

Weather SOP

Other extreme weather

n	For weather conditions (winter depressions and local formations)	
1	Bulletin	1. Issued 72 hours before the impact of the case. 2. Renew once every 48 hours (if necessary). 3. Issued by status strength level table 4. A serial number and a release number are given.
2	Rain alert	1. Issued at the sharpness level. 2. Renewed once every 24 hours. 3. Issued by status strength level table 4. Gives a serial number and a release number
3	Tweets for heavy rain in the form of an alert	1. If there is a possibility of rainfall exceeding 15 mm. 2. The tweet is released 3 hours ago 3. Validity does not exceed one hour.

OPERATIONAL PROCEDURES

- The Internal Committee for the Management of Exceptional Weather Conditions and its Operational Procedures
- Duties of the Exceptional Weather Management Committee
- Formation of shift work teams (for other departments)
  - Tasks of the first working group (forecasting and early warning)
  - Tasks of the second working group (numerical predictions and studies)
  - Tasks of the third working group (support operations IT & maintenance)
  - Duties of the Director of the Media and Communications Department at the Civil Aviation Authority

WEATHER BULLETIN SAMPLES

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Weather Report (4)

Weather During the next coming days

Issuing time: 11:00 PM LST
Date: 8th December 2019
Issue number: 5

A trough of low pressure over the Sultanate.

Moderate to heavy rain has fallen over most of the Sultanate. The latest weather analysis in the National Multi Hazard Early Warning Centre indicates isolated rain will continue through the night over Governorates of Musandam, Al-Dakhliya, North Al-Sharqiya, South Al-Sharqiya, Al-Wusta and Dhofar. And chances of isolated rain will continue tomorrow Monday over Musandam Governorate and the coastal areas of Oman Sea.

Also, the chances of Thundershowers associated with hail and down draft wind over the governorate of Musandam, North Al-Batinah, South Al-Batinah, Muscat and Al-Hajar Mountains during Tuesday 10th and Wednesday 11th of December 2019.

Weather over Arabian Sea.

Classifications: tropical Depression.

The weather analysis indicates tropical Depressions located at longitude 61.5.0oE and latitude 09.4oN over the south western Arabian Sea with estimated surface wind speed around the center between (17 to 27 knots), with no direct impact over the Sultanate coasts.

Sea condition along the coasts of Arabian Sea will be moderate to rough with maximum wave height ranging between (2 – 3 meters), and slight to moderate along rest of the coasts with maximum wave height ranging between (1.5 – 2.0 meters).

The National Multi Hazard Early Warning Center continues to monitor all updates of this tropical weather event and the Public Authority for Civil Aviation advices the public to take precautions during rainfall, flash floods, and avoid sailing the sea along the coastal areas and follow its latest weather bulletins and reports.

Note: The report will be updated every 48 hours.

National Multi Hazard Early Warning Centre
The Directorate General of Meteorology
Public Authority for Civil Aviation

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الهيئة العامة للطيران المدني
صندوق البريد ا. الرمز البريدي: ااا. مسقط
سلطنة عمان

PACA
الهيئة العامة للطيران المدني

Day: Sunday

Date: 11th November 2019

Validity: Sunday 11:00 AM to 11:00 PM

Bulletin: (4)

Weather Alert

Due to the expected **continuous heavy thundershower** over Musandam, North al Batinah, South al Batinah, al Buraimi, al Dakhliya, al Dahirah and Muscat governorates, which would be accompanied with fresh winds, hail, flash floods (wadis) and reduction in the horizontal visibility. Sea state will be moderate to rough during this period over Oman Sea.

Hence, the public Authority for Civil Aviation advices all to take precautions during rainfall and flash floods (wadis), check the sea state before sailing and keep monitoring the weather bulletins.

المركز الوطني للإنذار المبكر من المخاطر المتعددة
المديرية العامة للأرصاد الجوية
الهيئة العامة للطيران المدني

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WEATHER BULLETIN SAMPLES

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Statement for the end of direct impacts of the Tropical system "Hikka"

Issuing time: 05:00 AM LST

Date: 25th September 2019

The National Multi Hazards Early Warning Center declares that the direct effects of the tropical system are over.

However, the Latest weather charts analysis and satellite images indicate the continuation of indirect effects of the tropical system over governorates of AL-Wusta and Dhofar and Al-hajar Mountains with chance of isolated rain.

The sea state along the coastal areas of South Al-Sharqiya and Al-Wusta will be rough with maximum wave height ranges between 2.0 and 3.0 meters. The sea state will be slight to moderate along the rest of Oman coasts with maximum wave height between 1.5 meters.

The Public Authority for Civil Aviation is pleased to express its sincere gratitude to His Majesty the Sultan Qaboos bin Said for his great support for civil aviation sector in general and for meteorology in particular and for the cooperation of citizens and residents in following up the warnings issued by the National Multi Hazards Early Warning Center, Minimizing the impact of the Tropical system. The National Multi Hazards Early Warning Center appreciates all the efforts made by the National Committee for Civil Defiance and the various civilian and military sectors.

National Multi Hazard Early Warning Centre
The Directorate General of Meteorology
Public Authority for Civil Aviation

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Warning (1)

Tropical Storm (Hikka) over Arabian Sea

Classification: Tropical Storm

Issuing time: 11:00 PM LST

Date: 23rd September 2019

Issue number: 4

Latest Weather chart analysis at the National Multi Hazards Early Warning Center indicate that the tropical storm 'Hikaa' is located over western of Arabian Sea at longitude 62.9°E and latitude 20.2°N with estimated surface wind speed around the center between 45 and 55 knots (83 to 100 km/hr). The storm is about 420 km away from Masirah Island and the closest convective clouds band associate with the system is about 250 km from Masirah Island.

The tropical storm continues to move westward towards the coasts of Al-Sharqiya and Al-Wusta Governorates and the landfall is expected to be between Southern Al Sharqiya and Al Wusta by tomorrow evening. The direct effects over Governorates of Southern Al Sharqiya and Al Wusta will be starting from tomorrow afternoon, Tuesday 24th September 2019, which will be associated with heavy rain ranging between 50 and 80 millimeters and gale winds ranges between 45 and 55 knots.

Rough sea state is expected over the coastal areas of South Al-Sharqiya and Al-Wusta with maximum wave height ranging between 4 and 6 meters. Storm surge might cause sea water inundation over low level coastal areas. The sea state will be moderate along the rest of Omani coasts with maximum wave height between 1.5 and 2.5 meters.

The Public Authority for Civil Aviation advices the public to take proper precaution, stay away from low lying areas and avoid crossing wadis. The Authority also advices the fishermen and sea goers to avoid venture into the sea and follow latest and updated bulletin from the National Multi Hazard Early Warning Centre.

Note: The warning will be updated every 6 hours.

National Multi Hazard Early Warning Centre
The Directorate General of Meteorology
Public Authority for Civil Aviation

Public Authority for Civil Aviation
P.O. Box :1 , p.c. : 111, Muscat
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WEATHER ALERTS AND TWEETS SAMPLES

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Day: Friday

Validity: from 4 am to 4 pm

Date: 16th July 2021

Issue: **(4)**

Weather Alert

Chances of Thunderstorms will continue over most of the Sultanate **today "Friday" 16th July 2021**. The heavy rain is expected over Governorates of Dhofar, North Al-Sharqiya, South Al-Sharqiya, Muscat, the coastal areas of Oman Sea and Al Hajar Mountains and surroundings, with amounts range between 30 mm to 50 mm associated with fresh wind and may cause flash floods "Wadis".

The Public Authority for Civil Aviation advices all to take precaution during rain and wadis and avoid sailing during the mentioned period.

هيئة الطيران المدني
Civil Aviation Authority

صندوق البريد: ١، الرمز البريدي: ١١١ مسقط – سلطنة عمان هاتف المكتب ٢/٢٤٣٥٤٤٤١ (٩٦٨+) فاكس: ٢٤٣٥٤٥٤٥ (٩٦٨+)
P.O. Box: 1, P.C.: 111, Muscat – Sultanate of Oman, Tel Office : (+968) 24354441 / 2, Fax : (+968) 24354545

Tweet

الأرصاد العمانية
@OmanMeteorology

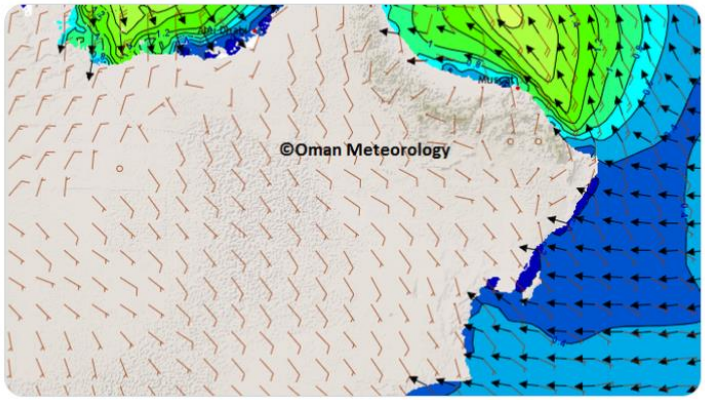
تنبيه!
تحرك كتل من السحب الركامية مصحوبة بأمطار رعدية غزيرة و رياح نشطة بإتجاه محافظات الداخلية وشمال الشرقية وجنوب الشرقية خلال الساعات القادمة.

Translate Tweet
20:40 · 30 Mar 20 · Twitter Web App

119 Retweets **465** Likes

الأرصاد العمانية @OmanMeteorology · ١١ نوفمبر ٢٠١٥

للتنبية: يكون البحر هائج الموج على سواحل بحر عمان ومحافظة مسندم ابتداء من مساء اليوم ويصل اقصى ارتفاع له 3 أمتار.



WEATHER IMPACT BASED FORECAST SOP INTRODUCTION AND GOAL

- Scientific advancement in the field of weather prediction supports predicting risk effects.
- The third version of the SOP for the NMHEWC goal is to improve prediction and early warning services based on the Impact of the weather changes.
- Provide warnings on time to achieves the purpose of life saving and to reduce the damage to property.
- IBF can be used by decision makers in Public and private sectors also by average people to take appropriate measures through the information that shows how the weather threats will affect their lives, properties and ways to live.
- Ensuring the arrival of appropriate information that helps the public and National Committee for the Management of Emergency to optimize response.
- The ultimate goal is to preserve lives, national gains and property.
- This guide shows the necessary steps to deal with weather conditions at the NMHEWC from multiple risks in order to contribute to the safety of life and to reduce damage to property and infrastructure.

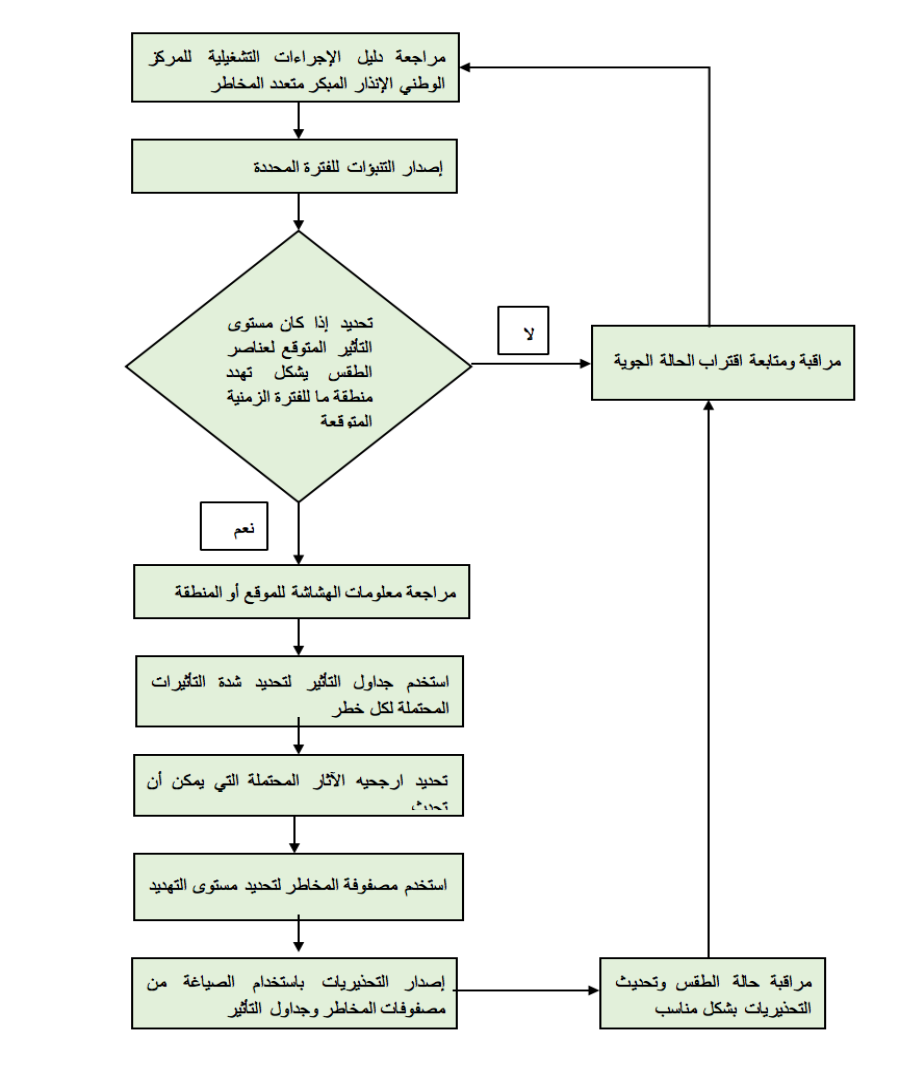
WEATHER IMPACT BASED FORECAST SOP
THE MOST IMPORTANT MODIFICATION IN THE SOP

- Prediction according to the potential effect and risks associated with the change of weather.
- Reducing construction speech and converting reports to specific points that are updated without changing the formulation.
- Separate the level of impact from the status level in the tropics (tropical depression/ tropical cyclone).
- Adopting the color schedule in determining the levels of impact .
- Reducing a series of approvals and modifications and therefore the information get to all to response to the developments in the weather.
- Activating and elevating the NMHEWC role in the management of the weather information.
- Facilitating the arrival of the correct information and its absorption from the public and private authorities, institutions and the public.

WEATHER IMPACT BASED FORECAST SOP
THE IDEA OF THE PROPOSED SYSTEM IS BASED ON THE CLASSIFICATION OF THE EFFECT OF THE WEATHER CONDITION

Alarm Level	Alarm level color	Level of impact	Level of general warning response	Potential impact	Recommended action
Level 1	**green**	**No effect. (Low effect)**	**No action.**	1. Slight effect 2. No impact on daily activities and routine life. 3. Weather does not pose a life-threatening threat.	1. Follow daily weather bulletins.
Level 2	**yellow**	**medium**	**Be informed.**	1. Slight effect 2. No impact on daily activities and routine life. 3. Weather does not pose a life-threatening threat.	1. You should follow the weather updates, bulletins and alerts. 2. It is advisable to change the daily routine in accordance with the weather.
Level 3	**orange**	**High**	**Be prepared.**	1. Relative or low effect 2. Danger is possible but normal 3. Some public and basic services are likely to be affected 4. The weather is likely not life-threatening.	1. You should stay up to date with updates, weather bulletins and alerts. 2. Avoid going out and moving during this period. 3. You must change your plans in accordance with the weather. 4. Follow the advice of official emergency management authorities and local authorities.
Level 4	**red**	**acute**	**Take precautionary action.**	1. Medium-level or strong effect 2. Unusual risk potential 3. Infrastructure is likely to be partially damaged and some public and basic services are cut off. 4. Weather can cause a risk to your life if you are directly affected	1. You should stay up to date with updates, weather bulletins and alerts. 2. Take appropriate action to keep yourself and others safe. 3. Avoid areas likely to be affected by the situation and move to its security areas. 4. Follow the advice of official emergency management authorities and local authorities.

Weather Impact based Forecast SOP



THE GRAPHIC PLAN FOR THE IMPACT BASED FORECAST APPROACH

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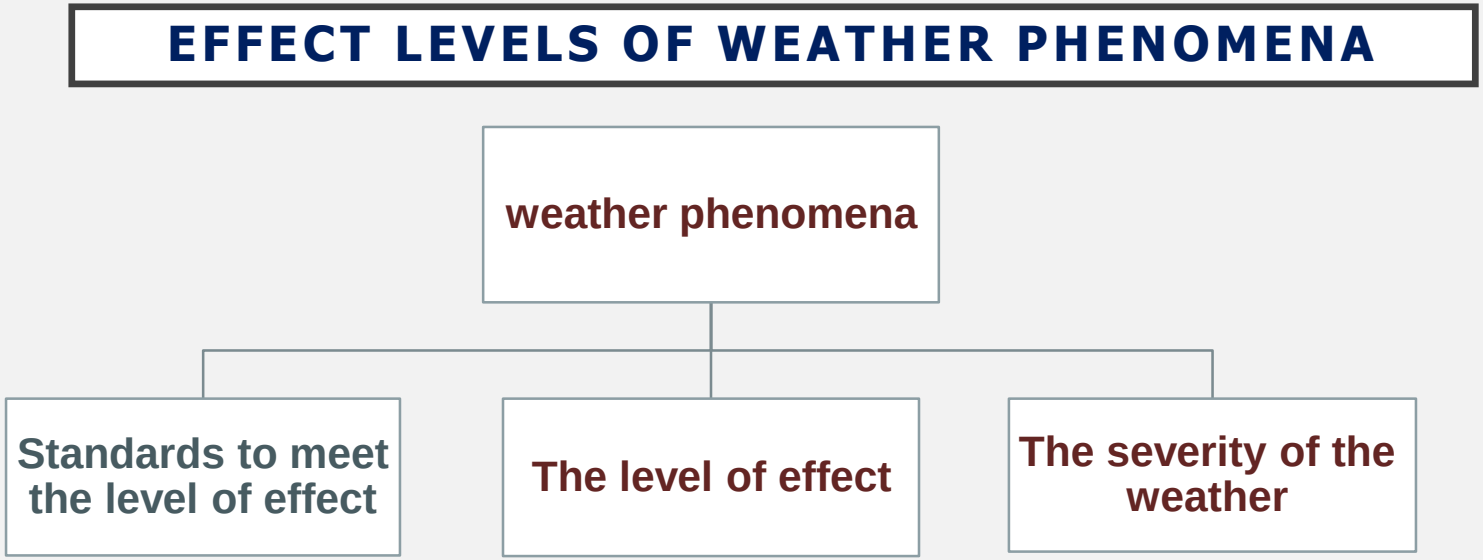
Weather Impact based Forecast SOP



The phenomena that were taken into account:

- Rains / thounderstorms
- Sand and dust storms
- Fog
- Cold wave
- Heat wave
- Sea waves
- Storm surge

Rainfall

Weather Phenomenon	Weather Intensity	Impact Level	Impact Level Criteria Expected Rainfall Amount
Rainfall	Light to moderate	Low	Less than 20 mm per hour or/and Less than 40 mm in 24 hours
	Heavy Rain	medium	20 - 30 mm per hour or/and 40 - 60 mm in 24 hours
	Very Heavy Rain	High	30 - 50 mm per hour or/and 60 - 80 mm in 24 hours
	Torrential Rain	acute	More than 50 mm per hour or/and or more than 80 mm in 24 hours

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Winds

Weather Phenomenon	Weather Intensity	Impact Level	Impact Level Criteria Average Wind Speed in Knots
Winds	Light to moderate	Low	Less than 30
	Moderate to strong	medium	40 - 31
	Very strong	High	41 - 63
	Intense/ Severe	acute	Greater than 64

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Sandstorms and Dust Storms

Weather Phenomenon	Weather Intensity	Impact Level	Impact Level Criteria Reduced Horizontal Visibility Due to Dust
Sandstorms and Dust Storms	Dust and Sand Dispersion	Low	Above 5000 meters
	Moderate Density	Average	3000 – 5000 meters
	Heavy	High	1000 – 3000 meters
	Very Heavy	Severe	Less than 1000 meters

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Fog

Weather Phenomenon	Weather Intensity	Impact Level	Impact Level Criteria Reduced Horizontal Visibility Due to Fog
Fog	High Humidity	Low	Above 1500 meters
	Moderate Density	Average	1000 to 1500 meters
	Very Dense	High	500 to 1000 meters
	Heavy Density	Severe	Less than 500 meters

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Cold Wave

Weather Phenomenon	Weather Intensity	Impact Level	Impact Level Criteria Apparent Temperature
Cold Wave	Natural	Low	More than 15 degrees Celsius
	Cold Day	medium	10 to 15 degrees Celsius
	Cold Wave	High	1 to 9 degrees Celsius
	Severe Cold Wave	acute	Less than 0 degrees Celsius

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Heat Wave

Weather Phenomenon	Weather Intensity	Impact Level	Impact Level Criteria Apparent Temperature
Heat Wave	Natural	Low	Less than 35 degrees Celsius
	Hot Day	medium	35 to 45 degrees Celsius
	Hot Wave	High	45 to 50 degrees Celsius
	Severe Hot Wave	acute	More than 50 degrees Celsius

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أمواج البحر

الظاهرة الجوية	شدة عنصر الطقس	مستوى التأثير	معايير استيفاء مستوى التأثير **ارتفاع الموج**
أمواج البحر	هادئ	منخفض	اقل من 1.25 متر
	متوسط	متوسط	1.5 الى 2.5 متر
	هائج	عالي	2.75 الى 4 متر
	شديد الهيجان	شديد	اعلى من 4 متر

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Sea Waves

Weather Phenomenon	Weather Intensity	Impact Level	Impact Level Criteria Wave Height
Sea Waves	Calm	Low	Less than 1.25 meters
	Moderate	medium	1.5 to 2.5 meters
	Rough	High	2.75 to 4 meters
	Very Rough	acute	More than 4 meters

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هيئة الطيران المدني

Storm Surge

Weather Phenomenon	Weather Intensity	Impact Level	Impact Level Criteria: Astronomical Tide Height / wave hight
Storm Surge [1]	Low	Low	Less than 2.5 meters / Less than 1.0 meters
	Moderate	medium	2.5 to 3.0 meters / 1.0 – 2.0 meters
	High	High	2.0 to 3.0 meters / 2.0 – 3.5 meters
	Very High	acute	2.0 to 3.0 meters / More than 3.5 meters

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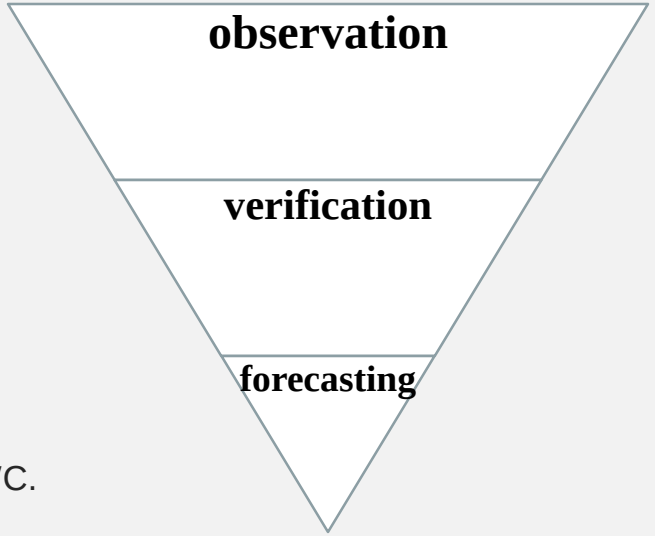
Weather Impact based Forecast SOP

THE BASIC OPERATIONS IN MONITORING THE WEATHER AND PREDICTING ITS IMPACT

- A group of tasks in the proposed SOP.
- A scheme for the basic daily tasks for weather forecasters.
- Appendix to routine tasks lists for each shift period.
- Additional tasks for each level.
- Activating the management of the weather cases by forming a team through uniform alternate schedules.
- Activating the internal regulations of the media dealing at the NMHEWC.



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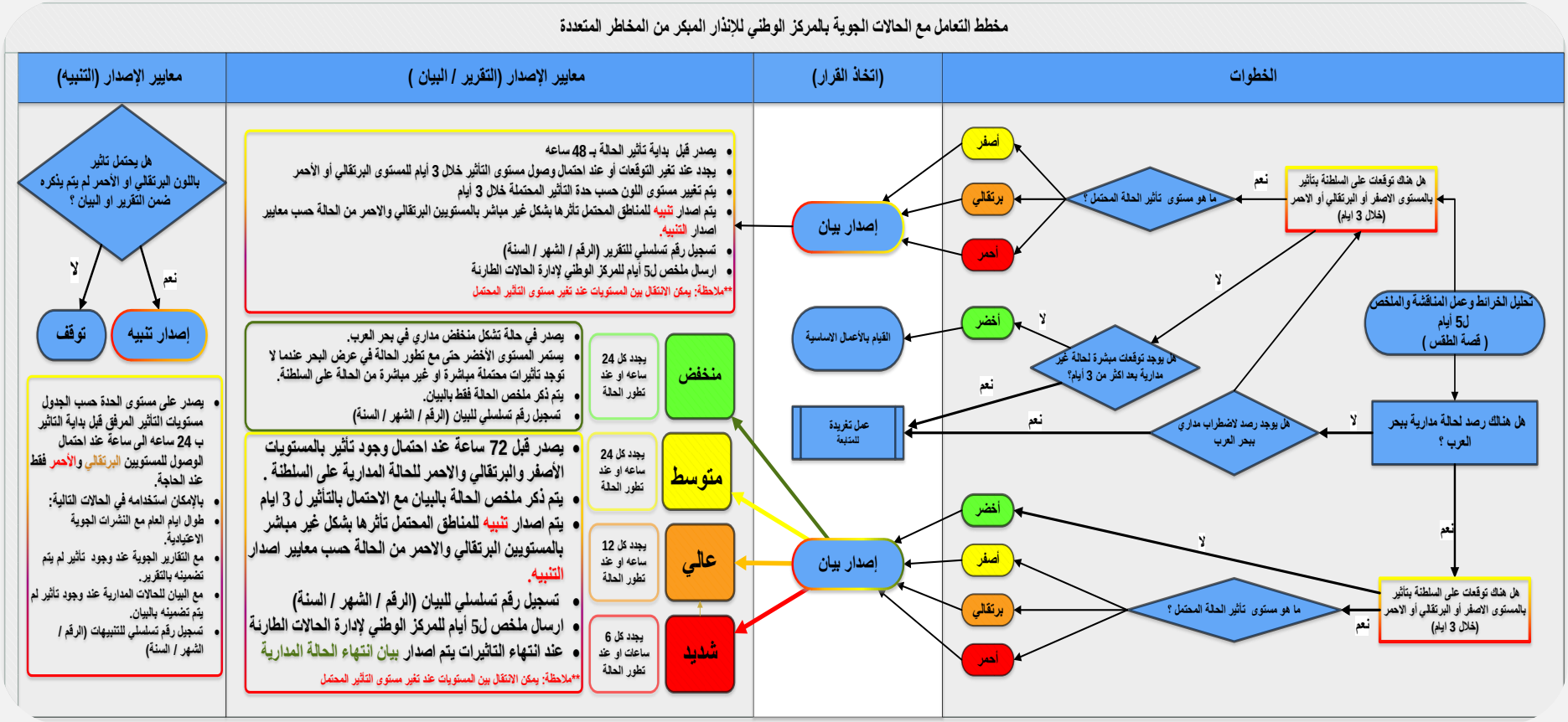
Weather Impact based Forecast SOP

THE PLAN TO DEAL WITH THE WEATHER CONDITIONS AT THE NMHEWC



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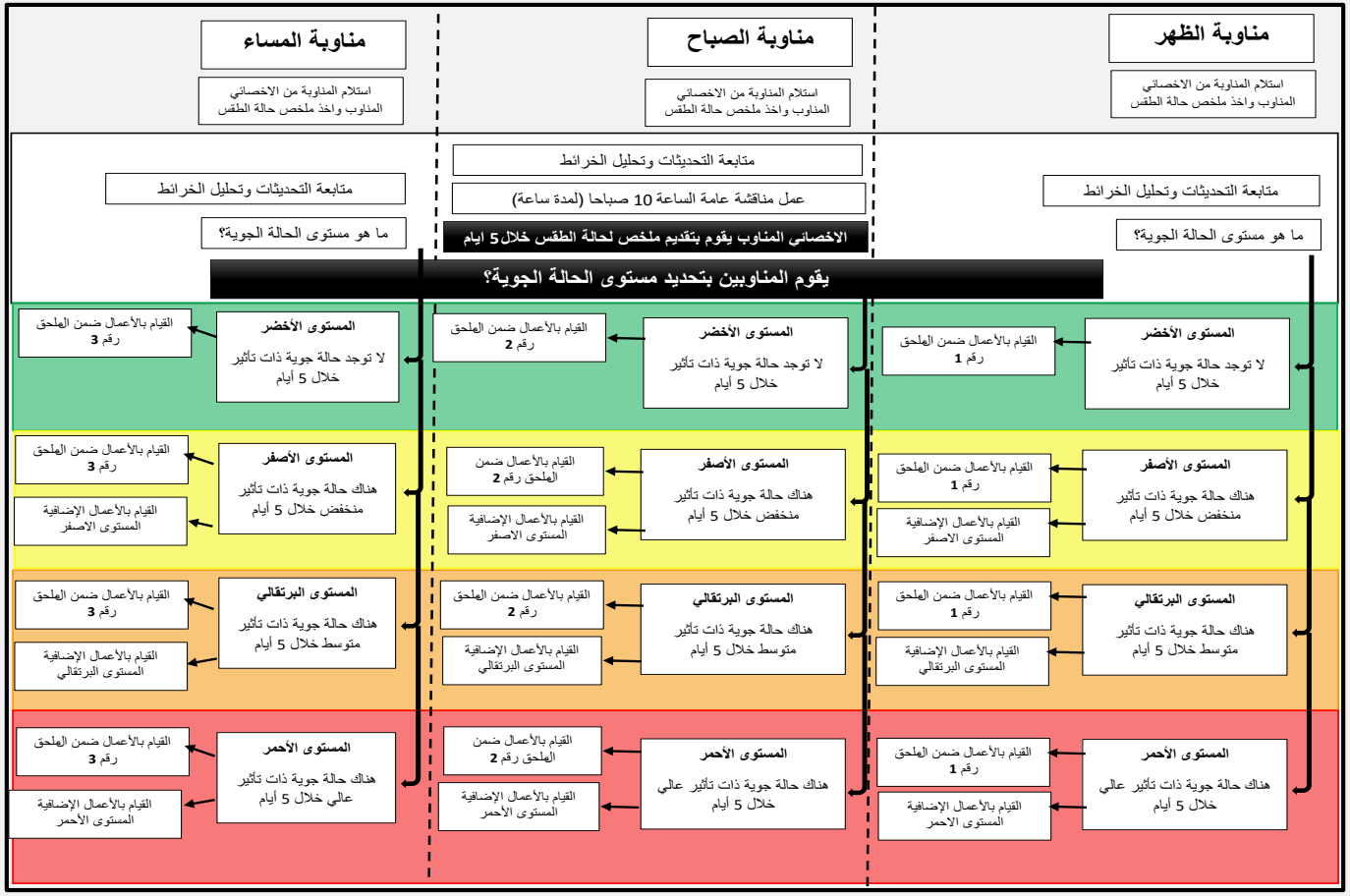
Weather Impact based Forecast SOP

DAILY TASK SCHEME FOR METEOROLOGICAL SPECIALIST



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Weather Impact based Forecast SOP

TEMPLATES

Weather synoptic summary

HANDOVER
Weather Update of Shift B - 25.07.2022 02:30 – 08:30

Name	Section	Updates
Met. Kauthar Al Jabri Met. Mansoor Al Shabibi	General Forecasting	**Radiosonde (00:00 UTC)** **(12:00 UTC Radiosonde was inaccessible due to moving weather shut down)** • Overall conditionally unstable weather with inversion near the surface • Excellent moisture between the surface and 400 hPa. Similar moisture to yesterday's • SW winds near the surface indicate dry air advection to the area which is in agreement with the little drop in PWAT value. • Varying winds between NW and NE aloft. Easterly winds at 500 hPa and above. • Most of the indices are worse for thunderstorm development today compared to yesterday. However, the LIFT index is better than yesterday's. • CAPE was estimated as 4968 J/kg which is higher than the past couple of days. • Strom motion is expected to be SSW. (Yesterday the formation moved in a W/SW direction instead of the predicted S direction) **Synoptic** • Upper air: Ridge of high pressure over the NW of the Arabian Peninsula. However, the SE of the Sultanate of Oman is under effect of extension of low pressure system. • Surface: Low pressure dominating over the area. NWP (Forecast) • The impact of the low pressure system is expected to start from this evening and affect the governorates of Muscat, N. Al Batinah, Al Dakhilia, and Al Sharqiya. The impact is expected to gradually affect the rest of the northern governorates later on. City forecast was issued successfully after the temporal return of the moving weather
Met. Souha Al Shibli	Marine Forecasting	• Morning forecast was issued after solving the moving weather issue • Evening forecast was issued successfully
Met. Luqman Al Huseini	Aviation	• Aerodrome: OOAD valid between 14:00 – 16:00 UTC • Aerodrome: OOMU valid between 14:00 – 16:00 UTC
Met. Moza Al Marhoobi	Observed vs. Excepted	Yesterday formation over Al Hajar mountains started early at 9UTC and lasted until 17 UTC according to the satellite imageries. Some formations were observed to start at 1815 UTC over Al Sharqiya governorate. Yesterday comparison showed that the ECMWF and COSMO Reg. had the correct expected area of effect but the amount of rainfall predicted was better forecasted by COSMO Reg.) The highest recorded precipitation amounts (SYNOP) are 18.4mm in Izki and 10.6mm Rustaq. (The other range between 0.2 – 9.4 mm). Current Satellite images show the movement of the low pressure accompanying cloud convection in a SW direction to the coastal areas of the sultanate of Oman. The NWP models expect the formation to start at a late hour tonight to early morning tomorrow over the NE parts, mainly between Sur and Muscat and then expanded top include the areas above al Hajer mountains and most of the area to the south of the mountains as well. Some light developments are expected over the coastal areas of Dhofar. (These mainly are the areas that both the ECMWF and COSMO Reg. agreed on)
Met. Moza Al Marhoobi	Ticket	• Moving weather collapsed (Status: Not yet)
Met. Kauthar Al Jabri	Media	• Oman TV at 7:00 PM

هيئة الطيران المدني
Civil Aviation Authority

صندوق البريد: ١، الرمز البريدي: ١١١ مسقط – سلطنة عمان. هاتف المكتب: ٢٤٥٤٤٤١/ (+٩٦٨) فاكس: ٢٤٥٤٥٤٥ (+٩٦٨)
P.O. Box: 1, P.C.: 111, Muscat – Sultanate of Oman, Tel Office : (+968) 24354441 / 2, Fax : (+968) 24354545

ملخص حالة الطقس لخمسة أيام (نشرة داخلية) — Weather synoptic story for five days

التاريخ واليوم: Tuesday, 8 March, 2022

شبه الجزيرة العربية وسلطنة عمان:

احتمال تأثير باللون الأصفر بتاريخ 10 حتى 12 مارس

تمركز مرتفع جوي على شبه الجزيرة العربية مع احتمال تأثر شمال شبه الجزيرة العربية بأخدود جوي على الكويت غدا مع احتمال تأثيره على سلطنة عمان بتاريخ 10 و11 و12 مارس مع احتمال تدفق السحب وتشكلها بجبل الحجر والمحافظات الشمالية مع امطار متوسطة الغزارة رعدية أحيانا.

بحر العرب:

سحب ركامية شرق بحر العرب

سحب ركامية شرق بحر العرب مع تمركز مرتفع جوي على المنطقة مع رياح موسمية جنوبية شرقية وانتشار لبعض السحب المتفرقة قبالة سواحل السلطنة ولا يحتمل تشكل حالة مدارية ببحر العرب.

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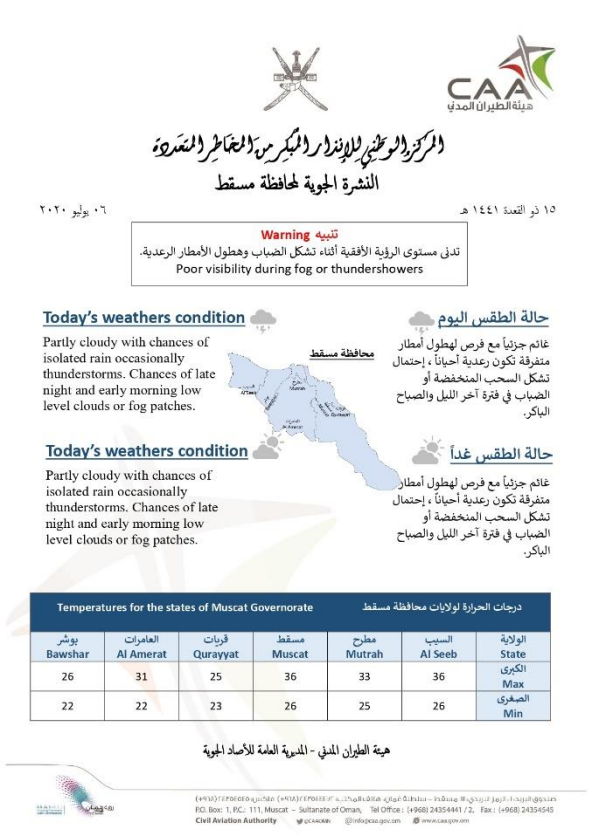
Weather Impact based Forecast SOP



المركز الوطني للإنذار المبكر من المخاطر المتعددة

النشرة الجوية لمحافظة مسقط

١٥ ذو القعدة ١٤٤١ هـ

٠٦ يوليو ٢٠٢٠

Warning تنبيه

تدنى مستوى الرؤية الأفقية أثناء تشكل الضباب وهطول الأمطار الرعدية.
Poor visibility during fog or thundershowers

Today's weathers condition

Partly cloudy with chances of isolated rain occasionally thunderstorms. Chances of late night and early morning low level clouds or fog patches.

محافظة مسقط

حالة الطقس اليوم

غائم جزئياً مع فرص لهطول أمطار متفرقة تكون رعدية أحياناً ، إحتمال تشكل السحب المنخفضة أو الضباب في فترة آخر الليل والصباح الباكر.

Today's weathers condition

Partly cloudy with chances of isolated rain occasionally thunderstorms. Chances of late night and early morning low level clouds or fog patches.

حالة الطقس غداً

غائم جزئياً مع فرص لهطول أمطار متفرقة تكون رعدية أحياناً ، إحتمال تشكل السحب المنخفضة أو الضباب في فترة آخر الليل والصباح الباكر.

Temperatures for the states of Muscat Governorate				درجات الحرارة لولايات محافظة مسقط		
بوشر Bawshar	العامرات Al Amerat	قريات Qurayyat	مسقط Muscat	مطرح Mutrah	السيب Al Seeb	الولاية State
26	31	25	36	33	36	الكبرى Max
22	22	23	26	25	26	الصغرى Min

هيئة الطيران المدني - المديرية العامة للأرصاد الجوية

سلطنة عمان
المديرية العامة للأرصاد الجوية
Sultanate Of Oman D.G. of Meteorology

نشرة الأحوال الجوية
Weather Bulletin

هيئة الطيران المدني
CAA

Oman forecast for the next 3 days
Cloudy, breezy and dry with isolated rain in the North Governorates

توقعات عمان للأيام الثلاثة القادمة
تسمات باردة جافة مع هطول أمطار متفرقة في المحافظات الشمالية

Today:
Isolated rainfall in the northern governorates with cloudy but dry over some areas. However, sunny on the Al Hajar Mountains, Al-Wusta and Dhofar. Rain may fall on western Hajar during the afternoon.

اليوم:
هطول أمطار متفرقة في المحافظات الشمالية مع مناطق غائمة ولكن جافة. أجواء مشمسة على جبال الحجر والوسطى وظفار. قد تهطل الأمطار على غرب الحجر خلال فترة ما بعد الظهر.

Tonight:
Cloudy, breezy and dry with some rain moving eastwards but isolated rain may affect over Oman Sea coast.

هذه الليلة:
غائم ونسيم جاف مع تدفق بعض السحب الممطرة المتفرقة باتجاه الشرق قد تؤثر على ساحل بحر عمان. بعض السحب المنخفضة أو الضباب محتمل في ساحل بحر العرب خلال الليل حتى الصباح الباكر.

Alerts:
Low horizontal visibility when fog forms.

التنبيهات:
تدني مستوى الرؤية الأفقية عند تشكّل الضباب.

Sea condition:

Musandam Coast	Oman Sea	Arabian Sea
1.25 M	2 M	2 M

حالة البحر:

موقع مسندم	بحر عمان	بحر العرب
١,٢٥ متر	٢,٠ متر	٢,٠ متر

Tuesday:
Clear moderate over most of the Sultanate. Some low clouds or fog possible in Arabian Sea Coast during late night to early morning.

الثلاثاء:
مشمس معتدل على معظم محافظات السلطنة. بعض السحب المنخفضة أو الضباب محتملة في ساحل بحر العرب خلال الليل حتى الصباح الباكر.

Outlook for Wednesday:
Clear moderate over most of the Sultanate with cloud formation in Al-Hajar Mountains during afternoon. Some low clouds or fog possible in Arabian Sea Coast during late night to early morning.

التوقعات ليوم الأربعاء:
مشمس معتدل على معظم محافظات السلطنة مع تكون السحب في جبال الحجر خلال فترة ما بعد الظهر. بعض السحب المنخفضة أو الضباب محتمل في ساحل بحر العرب خلال الليل حتى الصباح الباكر.

هيئة الطيران المدني
Civil Aviation Authority

صندوق البريد ١، الرمز البريدي ١١١ مسقط – سلطنة عمان، هاتف المكتب ٢/٤٥٠٤٤٤١ (+٩٦٨) فاكس ٤٥٠٤٤٤٣ (+٩٦٨)
P.O. Box: 1, P.C.: 111, Muscat – Sultanate of Oman, Tel Office : (+968) 24354441 / 2, Fax : (+968) 24354545

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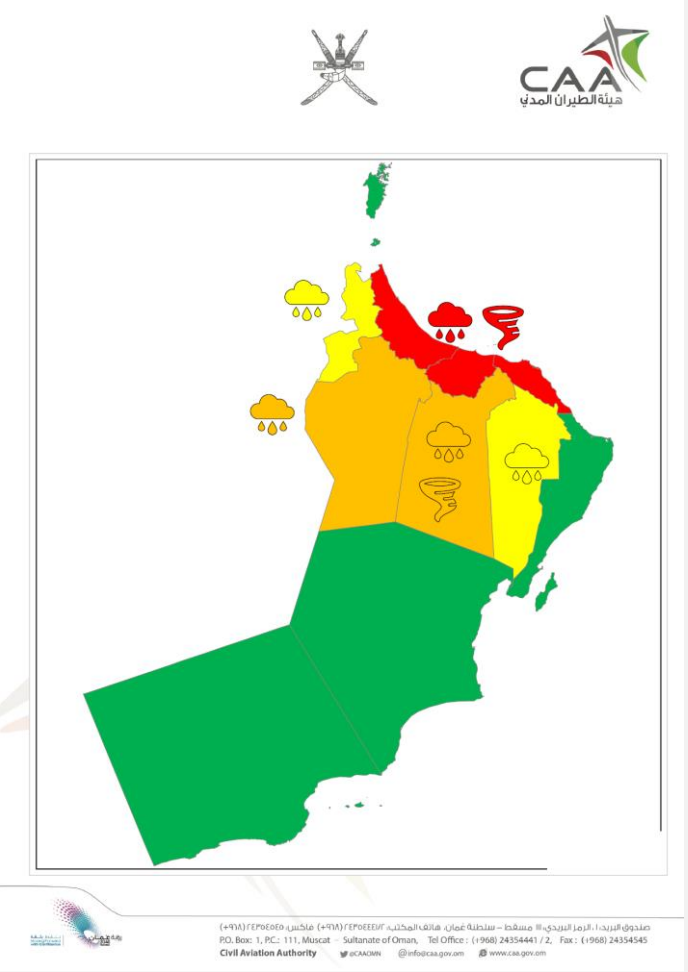
Weather Impact based Forecast SOP



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Weather Impact based Forecast SOP

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Weather Impact based Forecast SOP

THE INTERNAL REGULATIONS FOR MEDIA

- Goals of the list
- The main organizational regulations of media appearance and social media.
- Media dealing levels according to the level of potential impact.
  - Green
  - Yellow
  - Orange
  - Red

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Weather Impact based Forecast SOP

NEXT STEPS

- Development of meteorological services, accompanying the Oman 2040 vision
- Maps for fragility depending on the population density, potentially affected areas and infrastructure.
- Run a decision support system.
  - Training technical and administrative cadres associated with operating chains to keep pace with the new system.
  - Development of the services digitally.
  - Developing the center periodically to keep pace with the population expansion and increase the building and construction.

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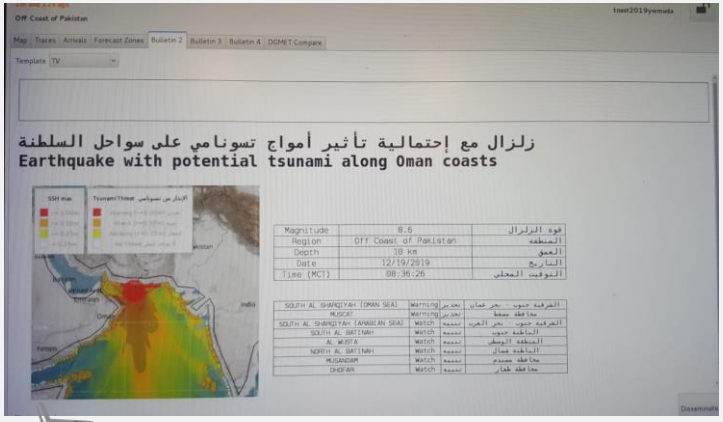
Tsunami SOP



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Tsunami SOP

Improvements regarding TEWS

- Started in March 2015
- The first SOP included 7 different SOP
- Updated in 2020 to include only 4 SOP
- The updated SOP with implementation of documentation standard ISO 9001/2015.
- Updating the National Tsunami SOP.

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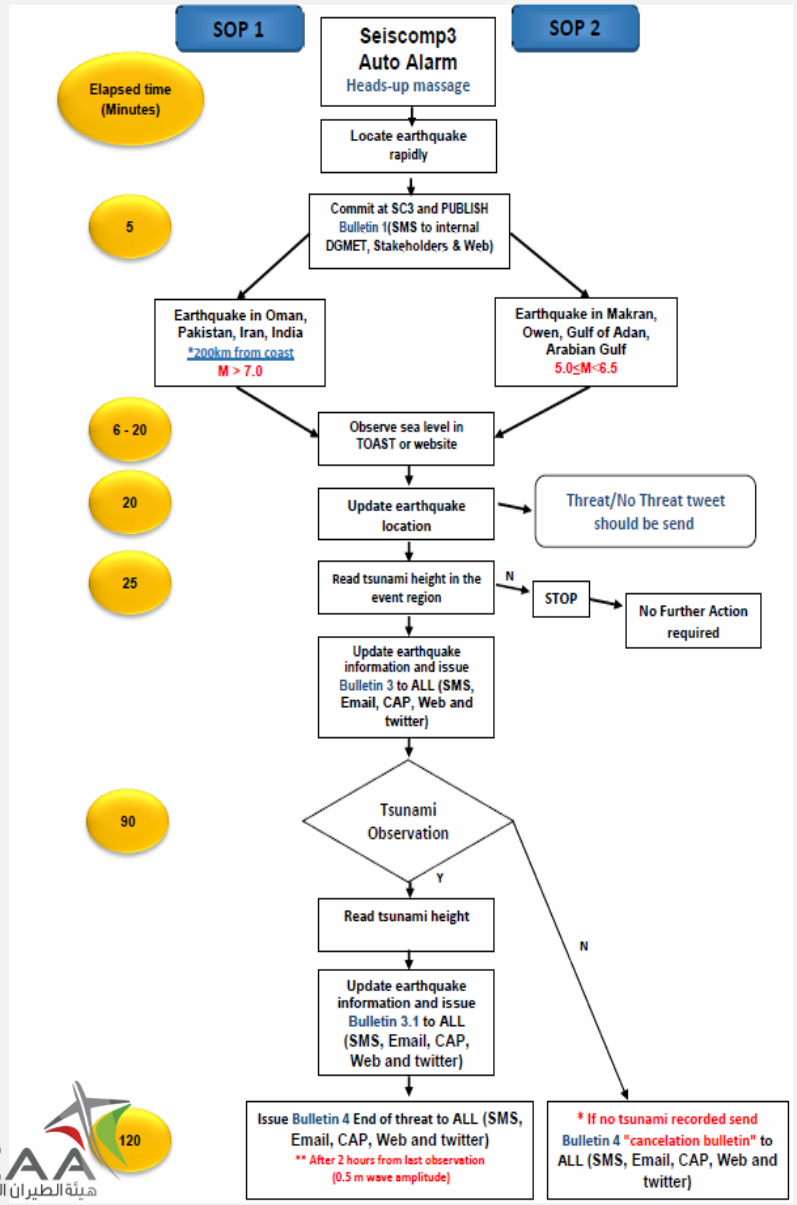
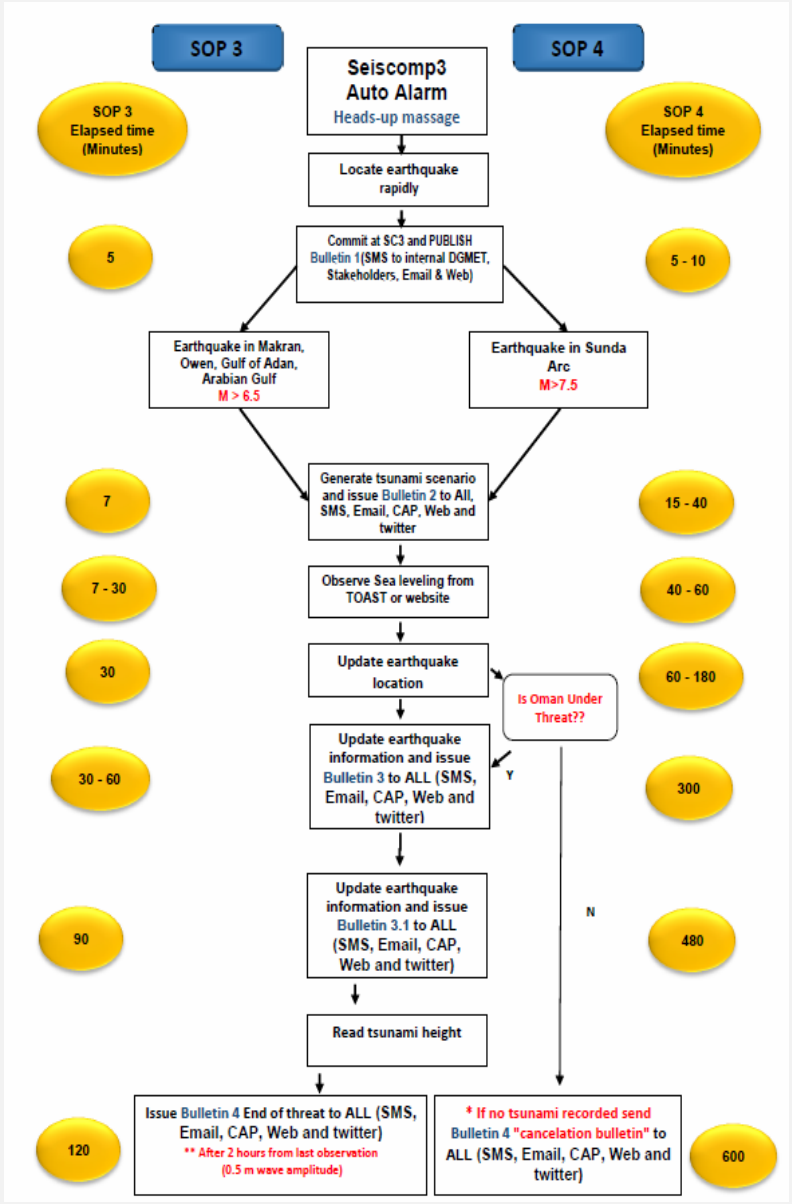
STANDARD OPERATION PROCEDURE FOR TSUNAMI EARLY WARNING SYSTEM





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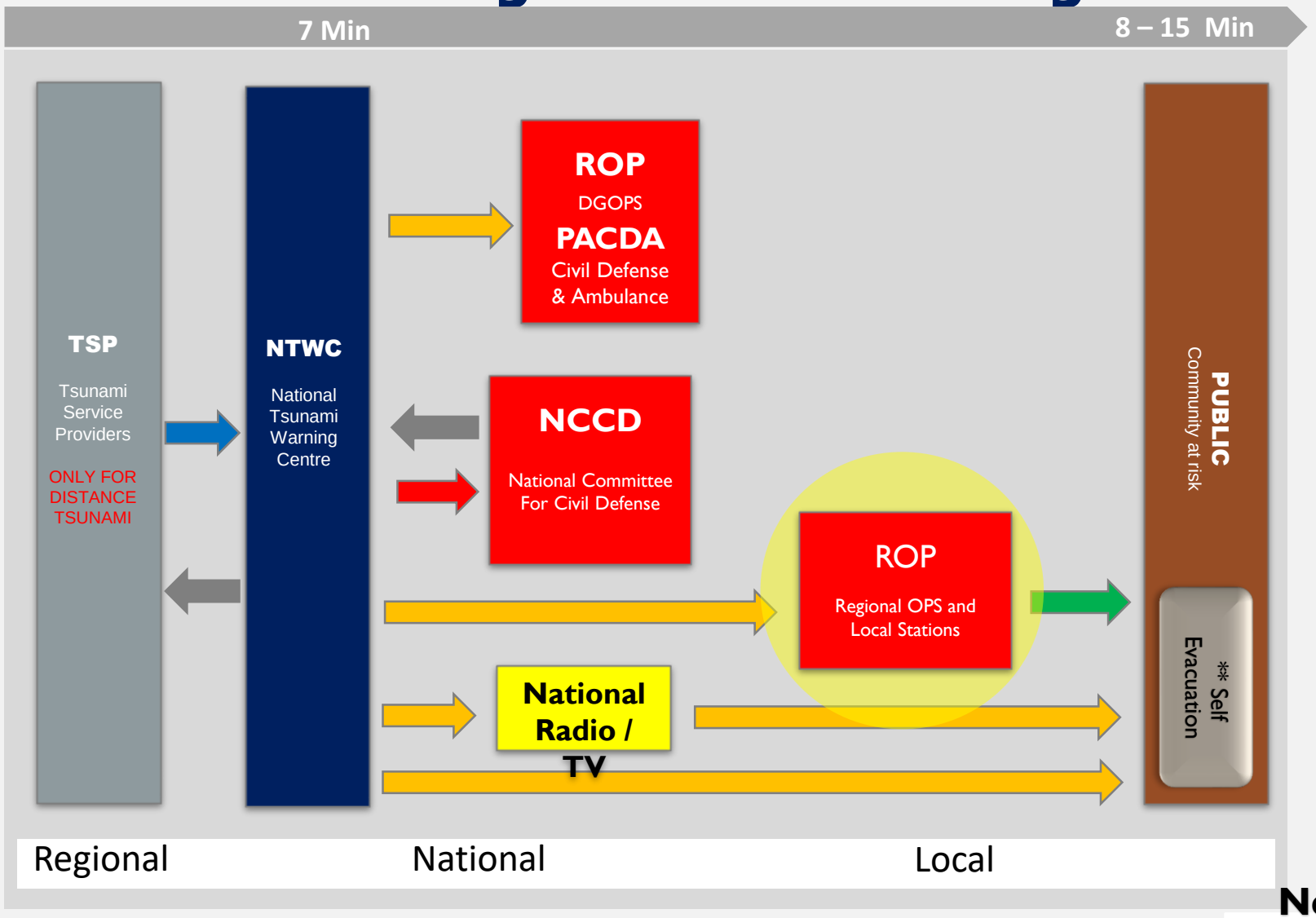
OMAN

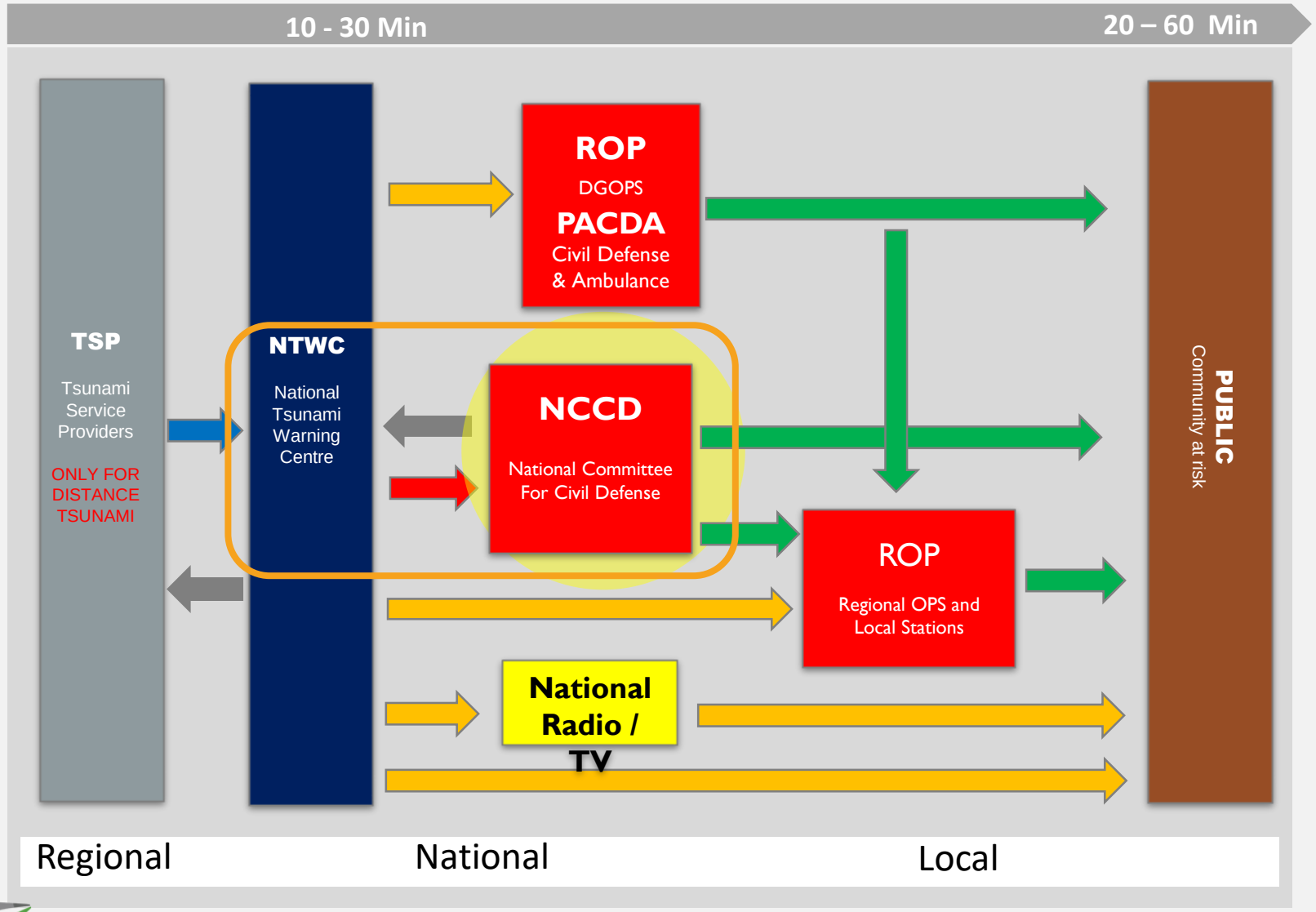
Tsunami warning National Warning Chain



Near field 25-2-2020

OMAN

Tsunami warning National Warning Chain



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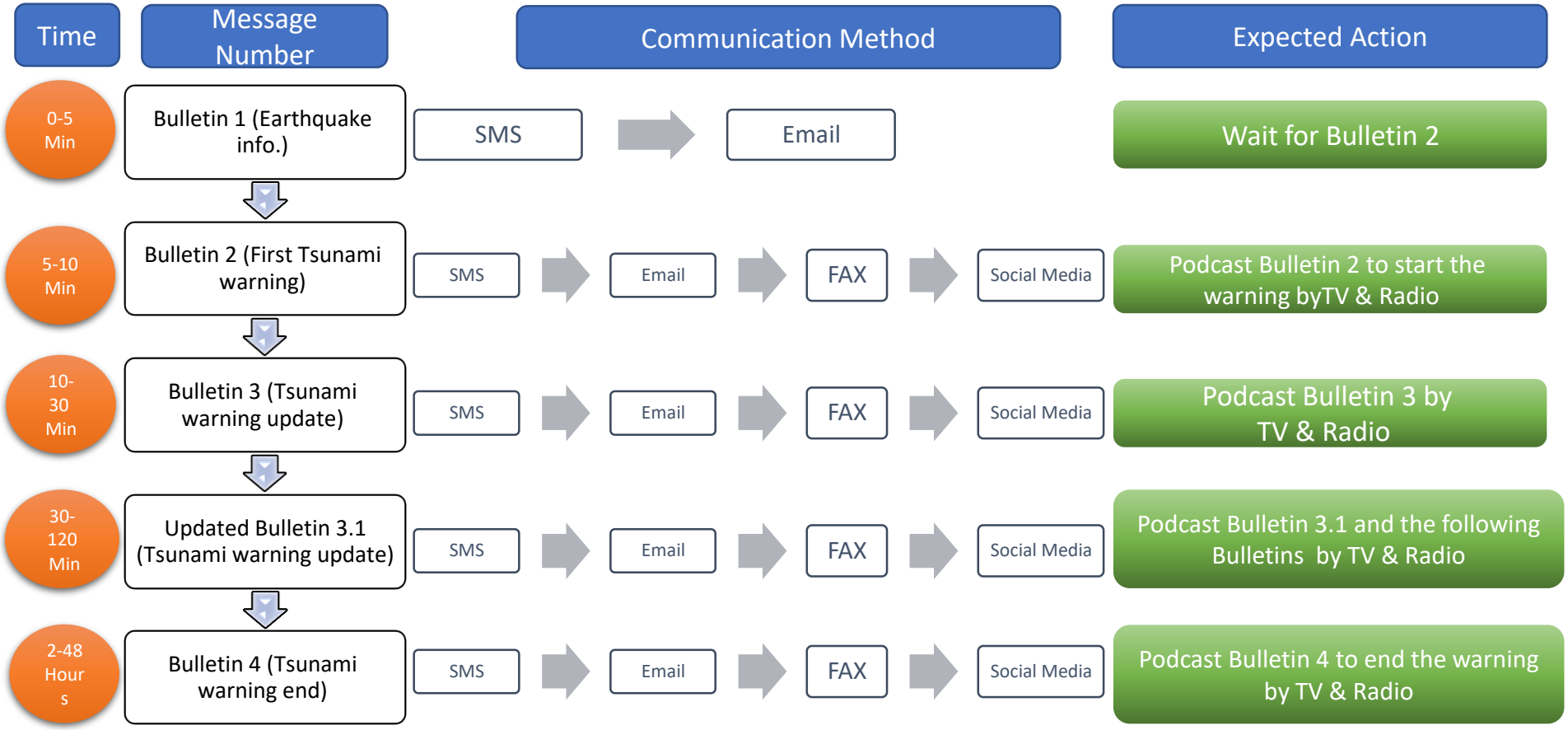
Far field
25-2-2020

Tsunami warning SOP

Public Authority of Television and Radio



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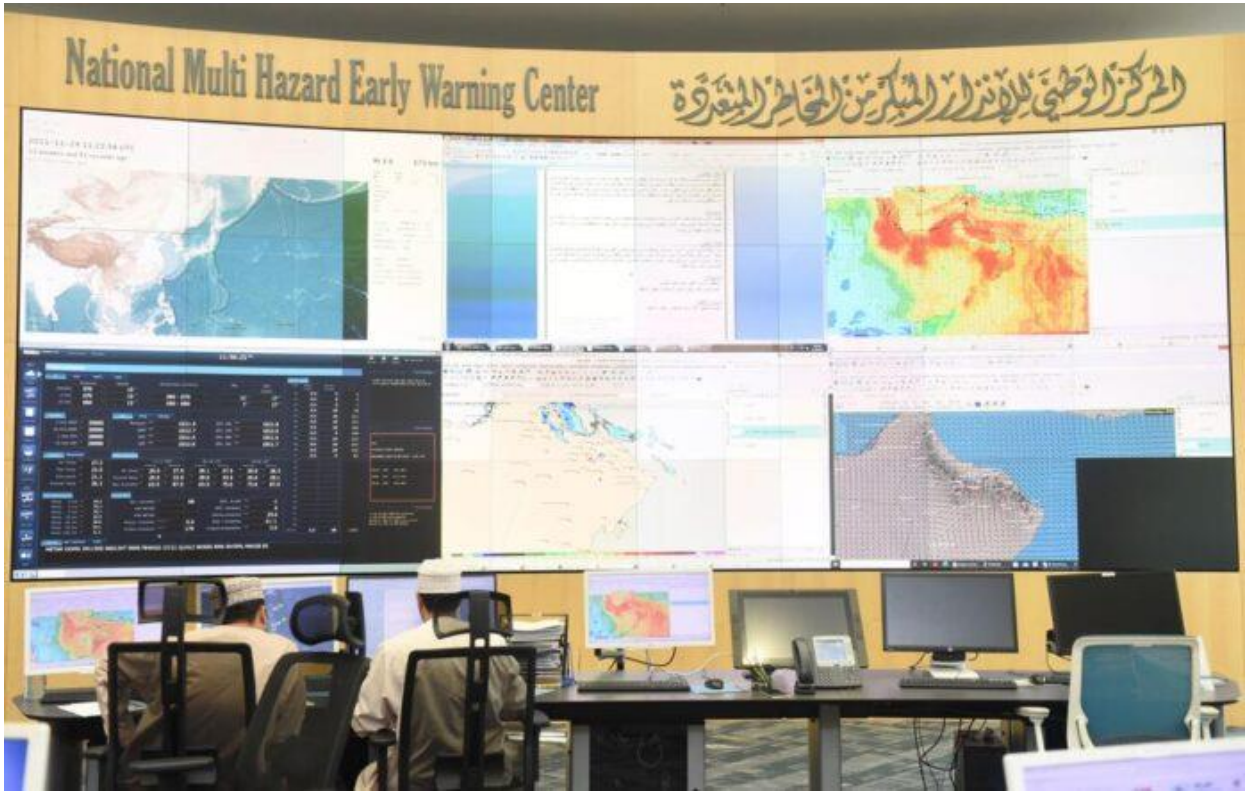
National Multi Hazard Early Warning Center
المركز الوطني للإنذار المبكر من المخاطر المتعددة

Thank You