TOWNS IN NOWSHERA DISTRICT, KHYBER PAKHTUNKHWAPAKHTUNKHWA, PAKISTAN

Analysis Description: This map presents the preliminary findings of a damage assessment over several flood-affected towns and cities along the Kabul and Kajair Rivers including the main city of Nowshera, Nowshera District, Khyber Pakhtunkhwa, Pakistan. This analysis is based on post-disaster Worldview-1 satellite imagery collected on 2 August 2010. All road and bridge damages related to the flooding have been individually identified and marked within the map. Flood-affected towns and villages have been classified by the relative degree of flooding impact and the approximate number and extent of building damages as visually identified in the satellite imagery. Not all flood-related damages have been identified because of limits in spatial resolution of the imagery used and due to heavy cloud cover over the assessed area. Damages identified are likely to be underestimated. This analysis has not yet been validated in the field. Please send ground feedback to UNITAR / UNOSAT.

Legend
- Railroad
- Train station / Depot
- Helipad
- Refugee Data
- Road Data
- Bridge (Likely Flood-damaged)
- Bridge (Likely Functional)
- Road Closed
- Road Access Restricted

Town / Village Damage Assessment Classification:
- Extensive and severe levels of flooding related building damages
- Moderate number and extent of flooding related building damages
- Limited number and extent of flooding related building damages
- No flooding impact identified

Bridge Damage Assessment Classification:
- Bridge (Likely Flood-damaged)
- Bridge (Likely Functional)

Road Obstacle Assessment Classification:
- Road Closed
- Road Access Restricted

Flooded in northern section of village, multiple damaged blds
No detected damages to route M1
Limited number of damaged blds south of village center

Both lanes of N5 closed; collapsed bridges, diversion in place

Highly restricted road access due to multiple road obstacles

Significant building damages north of N5

Significant building damages north of N5

Significant building damages north of N5

Significant building damages north of N5

Serious damages to buildings in south-eastern Risalpur

# Blow-ups

Präzisionen der Karten: 1:44,000

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ESRI (Landsat7 WMS) Background Imagery

Railroad sustained significant damages

Significant building damages in south-eastern Kandar

Road Data: Open Street Map

Majority of buildings flooded & likely severely damaged or destroyed

Rains & Flooding

UNOSAT

UNHCR

Road Data: Open Street Map

Operational Helipad 500m north-east of Sais Mandi

Serious damages to buildings in south-eastern Risalpur

Limited number and extent of flooding related building damages

Thick cloud cover has prevented a damage assessment further west

Majority of buildings flooded & likely severely damaged or destroyed

No detected damages to route M1

Limited number of damaged blds south of village center

Both lanes of N5 closed; collapsed bridges, diversion in place

Highly restricted road access due to multiple road obstacles

Significant building damages north of N5

Significant building damages north of N5

Significant building damages north of N5

Significant building damages north of N5
Damage Summary Covering 16 Flood-Affected Towns and Cities Along The Kabul and Kalpani Rivers, Nowshera District, Khyber Pakhtunkhwa, Pakistan – 5 August 2010

Analysis Description: This map presents the preliminary findings of a damage assessment over sixteen flood-affected towns and cities along the Kabul and Kalpani Rivers including the main city of Nowshera, Nowshera District, Khyber Pakhtunkhwa, Pakistan. This analysis is based on post-disaster Worldview-1 satellite imagery collected on 2 August 2010. All road and bridge damages related to the flooding have been individually identified and marked within the map; flood-affected towns and villages have been classified by the relative degree of flooding impact and the approximate number and extent of building damages as visually identified in the satellite imagery. Not all flood related damages have been identified because of limits in spatial resolution of the imagery used and due to heavy cloud cover over the assessed area; damages identified are likely to be underestimated. This analysis has not yet been validated in the field. Please send ground feedback to UNITAR / UNOSAT.

DAMAGE SUMMARY: (NORTH BANK OF KABUL RIVER) (See Overview map for exact locations)

1) **Nawe Kili** (34.021N 71.990E): A significant majority of buildings in the city are partially submerged under flood water from the Kabul River and are likely severely damaged or destroyed. Almost all interior local roads are impassable; the highway route N45 is operational however there are multiple partial flooding obstructions along both the north and south-bound traffic lanes.

2) **Kandar** (34.033N 72.005E): The town has sustained moderate levels of flooding and building damages along the south-eastern section of town. Road access west to route N45 is open without flooding-related obstacles however the main railroad line along the eastern edge of Kandar has likely sustained significant flood-related damages. There is a suspected IDP tent camp site erected on the eastern side of N45 at the western extent of town.

3) **Sais Mandi** (34.044N 71.995E): The majority of buildings in the southern section of town have been partially submerged under flood water and are likely severely damaged or destroyed. Most internal roads are either partially obstructed or impassable from the flooding; transport links to the highway route N45 and Risalpur are partially obstructed. There is a helipad 500m to the north-east that appears operational.

4) **Risalpur** (34.058N 71.002E): The majority of the city appears unaffected by the flooding, however there is a significant number of buildings south-east of a drainage channel that appear to have been seriously damaged by flooding from the Kabul River.

5) **Pir Sabaq** (34.026N 72.038E): The town has been severely damaged by the convergence of flood waters from the Kabul and Kalpani Rivers; a significant majority of buildings and local roads remains inundated with standing flood waters in the northern half and south-eastern sections of Pir Sabaq; with hundreds of local buildings likely severely damaged or destroyed; Indications of severe erosion along southern edge of Pir Sabaq and the Kabul River, threatening many remaining buildings resting on higher ground. The town has restricted road access from the primary northern route. The footbridge south of town crossing the Kabul River to the town of Dheri Kati Khel has been destroyed.

6) **Zara Miana** (34.021N 72.077E): A significant number of buildings in the southern section of town have been severely damaged or destroyed by flooding from the Kabul River; limited areas of standing water are still present along the main east-west road with multiple obstacle sites. A bridge linking the town eastward appears damaged but still functional. There is access to the town from two functional roads to the north.

7) **Turlandi** (34.017N 72.094E): There are limited flooding and building damages in the south-eastern corner of the village. Road access east-west is restricted with partial road/bridge damages however road access open to north.

DAMAGE SUMMARY: (SOUTH BANK OF KABUL RIVER)

1) **Nowshera** (34.003N 71.996E): Significant portions of the city were severely flooded from the Kabul River, with a majority of buildings north of the N5 highway likely severely damaged or destroyed; large areas of standing flood water are still present, blocking most local roads. South of the N5, damages appear to be significantly less severe, however there are still smaller pockets of standing water and partially-flooded road segments. All bridges along route N5 appear intact and functional, and there are no obstructions along the N5 itself. Note: heavy cloud cover over the western part of the city has prevented a complete assessment. The railroad depot and east-west tracks south of the city appear unaffected and operational.

2) **Dheri Kati Khel** (34.007N 72.031E): Overall the impact of flooding in this town appears to be significantly lower than identified in Nowshera, immediately to the west. Areas of significant building damages and flooding appear to have
been limited to the less developed sections of the town north of route N5. South of N5, there is little indication of flooding related damages. All bridges along the N5 appear intact and functional, and there are no obstructions along the N5 itself. The east-west railroad lines south of the town appear unaffected and operational. The footbridge crossing the Kabul river, linking Dheri Kati Khel with Pir Sabaq has been destroyed.

3) **Ismail Khel** (34.004N 72.058E): The core of village buildings sit on elevated land south of the railroad line and appear to be unaffected by flooding; however, there are clusters of likely severely damaged building between the Kabul River and the N5 as well as damaged buildings and standing flood waters situated between the N5 and the railroad line to the south. The two bridges along the N5 appear intact and functional, however there are two major flooding sites along the westbound lane of the N5 forcing a traffic diversion into the east-bound lane. The east-west railroad lines running through the village appear unaffected and operational.

4) **Wattar** (34.005N 72.070E): The situation appears similar to the adjacent village of Ismail Khel, with no visible indications of flooding within the core of village because of a slight elevation above the Kabul River; however, there are clusters of possibly damaged buildings between the Kabul River and the N5. The four main bridges along the N5 appear intact and functional along with the east-west railroad lines.

5) **Sura Khel** (34.002N 72.084E): The center of the village appears to be unaffected by the flooding; there are however clusters of likely severely damaged buildings between the Kabul River and the N5, as well as damaged buildings on the eastern side of the village caused by flooding from a small river feeding into the Kabul. There has been a total collapse of two major bridges along the east and westbound lanes of the N5 approximately 700m to the north-east of the village. All highway traffic is currently being diverted along an access road which itself is at risk of flooding. The east-west railroad lines south appear unaffected and operational.

**TOWN DAMAGE SUMMARY: (ALONG KALPANI RIVER)**

1) **Zando Banda** (34.071N 72.042E) Village likely unaffected by flood waters of the Kalpani River, however there are a limited number of damaged buildings along southern section of the village caused by the flooding of a small river feeding into the Kalpani. Transport routes are open to the north and east, however there is restricted road access further south due to partial flooding of a secondary road.

2) **Village west of Zando Banda** (34.069N 72.032E) Village likely unaffected by flood waters of the Kalpani River, however there are a limited number of damaged buildings along the southern section of the village caused by the flooding of small river feeding into the Kalpani. Transport routes are open to the east; however the Kalpani River bridge to Risalpur has two major points of severe damage and is likely to be not functional.

3) **Bara Banda** (34.084N 72.028E): The eastern edge of town, closet to the Kalpani River appears to have suffered limited flooding with no major building damages identified. Western transport routes from N45 appear fully functional. Note: partial cloud cover has restricted a more detailed assessment.

4) **Chauki** (34.095N 72.043E): The northern section of the village adjacent to the Kalpani River appears to have suffered significant flooding with potentially multiple damaged buildings. Eastern transport routes appear fully functional with the exception of partial road flooding to the north. Note: partial cloud cover has restricted a more detailed assessment.