

Storm Studio manual

How to turn an official storm forecast into a finished video, from your first export to delivery at a broadcast station.

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GLOSSARY

G Every word you meet in the app

What Storm Studio does

Storm Studio turns the official forecast for a tropical storm into a finished video — map, track, cone, wind and graphics — ready for broadcast, a website or social media.

You choose a storm. The app draws the rest.

WHERE THE STORMS COME FROM

Every live storm comes straight from the official advisories issued by the National Hurricane Center and the Central Pacific Hurricane Center. When a new advisory is published, **Latest Advisory** in the Data panel brings it in.

Past storms come from the historical records (HURDAT2 and IBTrACS), so you can also make a video of a storm from years ago — to compare with one happening now, or to show how a famous storm moved.

Storm Studio never invents data. If a video shows a replay of a past storm, or test data, it says so on the video itself. A live forecast always carries its source and the time of its advisory.

WHAT YOU CAN MAKE

- A video of any active or past storm, from a few seconds to five minutes long.
- The same project as a widescreen TV picture, a vertical phone video or a square social post, without building it twice.
- Graphics in more than twenty languages, including Japanese and Arabic, laid out right to left where the language needs it.
- Videos with your own logo, intro and outro, music and voice-over.
- A new video every time a new advisory comes out, made automatically while you are away.

WHERE YOUR WORK LIVES

Storm Studio runs in your web browser, but your projects and videos stay on your own computer. Nothing you make is stored on our servers. The app only fetches the storm

data; everything else happens on your machine, using your computer's graphics card to draw each frame.

WHAT YOU NEED

A computer with Chrome, Edge or Brave. Storm Studio writes H.264 video, which those browsers can encode and Firefox and Safari cannot. A recent graphics card makes long and 4K videos faster, but is not required.

WHAT NEXT

Your first video — fifteen minutes, start to finish

Finding your way around — the parts of the editor

1.1 Get started · What Storm Studio does

STORM STUDIO

Your first video

By the end of this page you will have an MP4 of a storm that is happening right now, saved on your own computer.

About fifteen minutes · Nothing to install

BEFORE YOU START

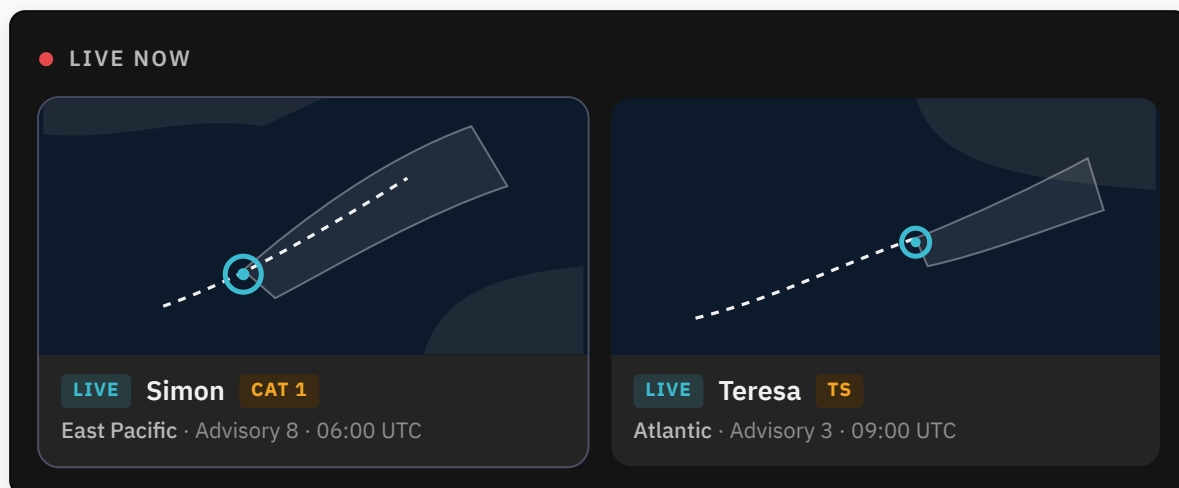
Use Chrome, Edge or Brave. If no storm is active anywhere in the world today, pick a past storm instead — every step below works the same way.

FOUR STEPS

1

Pick a storm

Storm Studio opens on the Home screen. At the top, under **LIVE NOW**, is every storm active anywhere in the world, taken straight from the official advisories. Click one. The editor opens with it already loaded.



Home screen

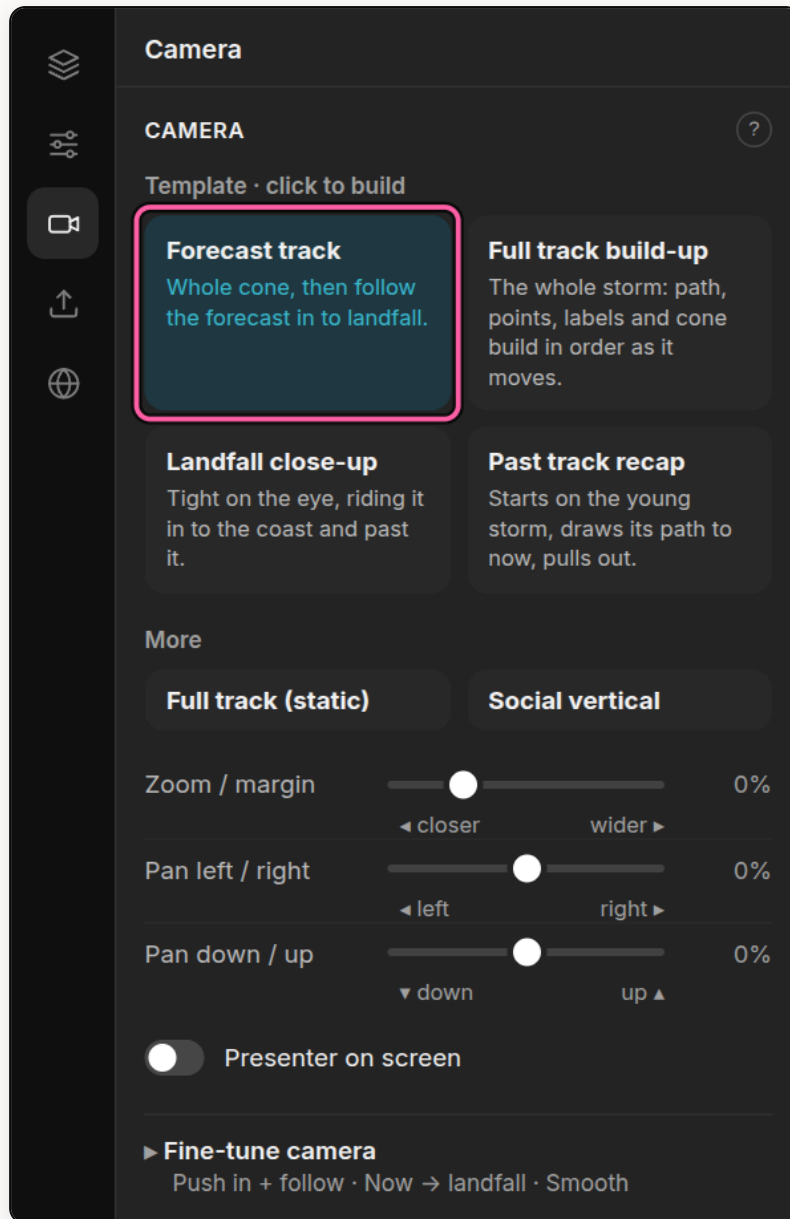
Changing your mind costs you nothing. Pick a different storm whenever you like, in the Data panel or from the Home screen. It never resets your timeline, your look or anything else you have set up.

2

Pick a look and a camera template

Two choices, and they do different jobs. A **look** decides how the video is drawn — the colours, the type, which graphics appear. A **camera template** decides how it moves.

For a first video, leave the look as it is and choose **Forecast track** in the Camera panel. It flies along the predicted path and is the one most people want.



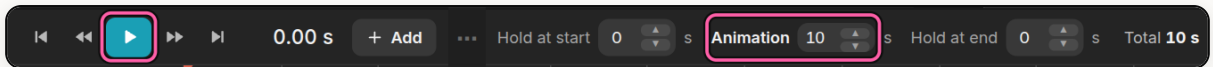
Camera panel

That is the whole of it. The app builds the complete video the moment you pick them — there is nothing to assemble, and no timeline to fill in by hand.

3

Watch it once

Press the play button below the canvas.



Transport bar, below the canvas

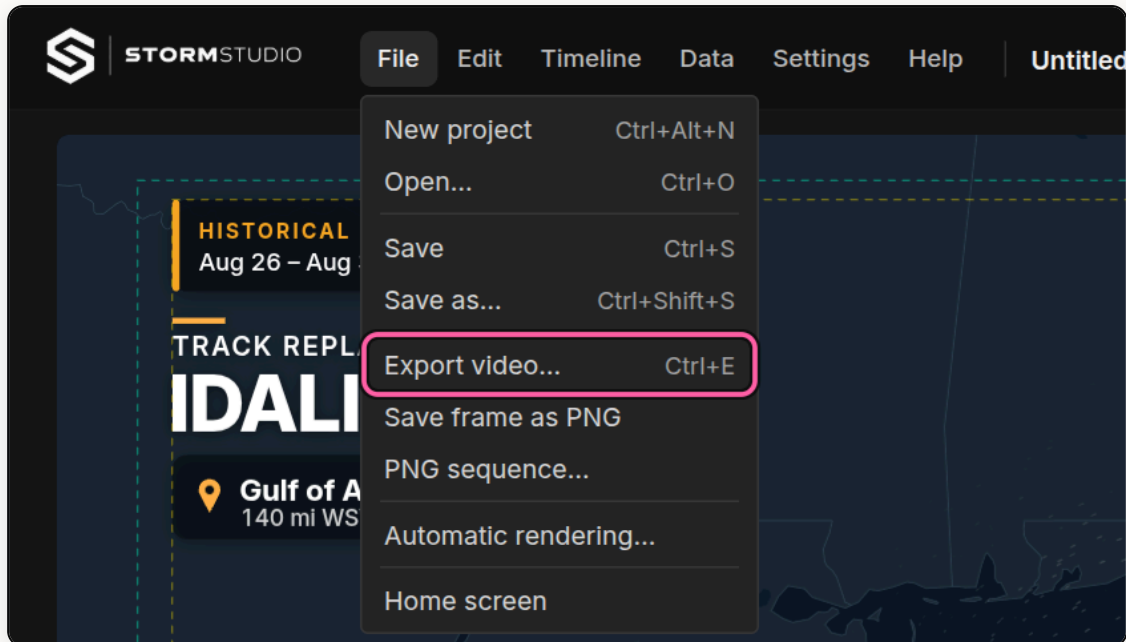
What you see is exactly what you get. The same renderer draws the preview and the exported file, so nothing in the MP4 will surprise you.

The video is ten seconds long to begin with. If the storm needs longer to tell its story, change **Animation** in the same bar and watch it again.

4

Export it

Choose `File > Export video...`, or press `Ctrl E`, then click **Export video** and pick where to save. Every frame is rendered at exactly the right moment in time, so the file comes out smooth however busy your computer was while it worked.



File menu

Keep the tab in front while it renders. Browsers slow down work in a tab you cannot see, and the export pauses until you come back to it. A ten-second video takes well under a minute, so this is rarely more than a short wait.

That is your first video. Everything else in this manual is a variation on those four steps.

WHAT NEXT

Save your project — so you can come back to it

Make the same video for phones — one project reflows to 9:16

Put your logo on it — brand images in every frame shape

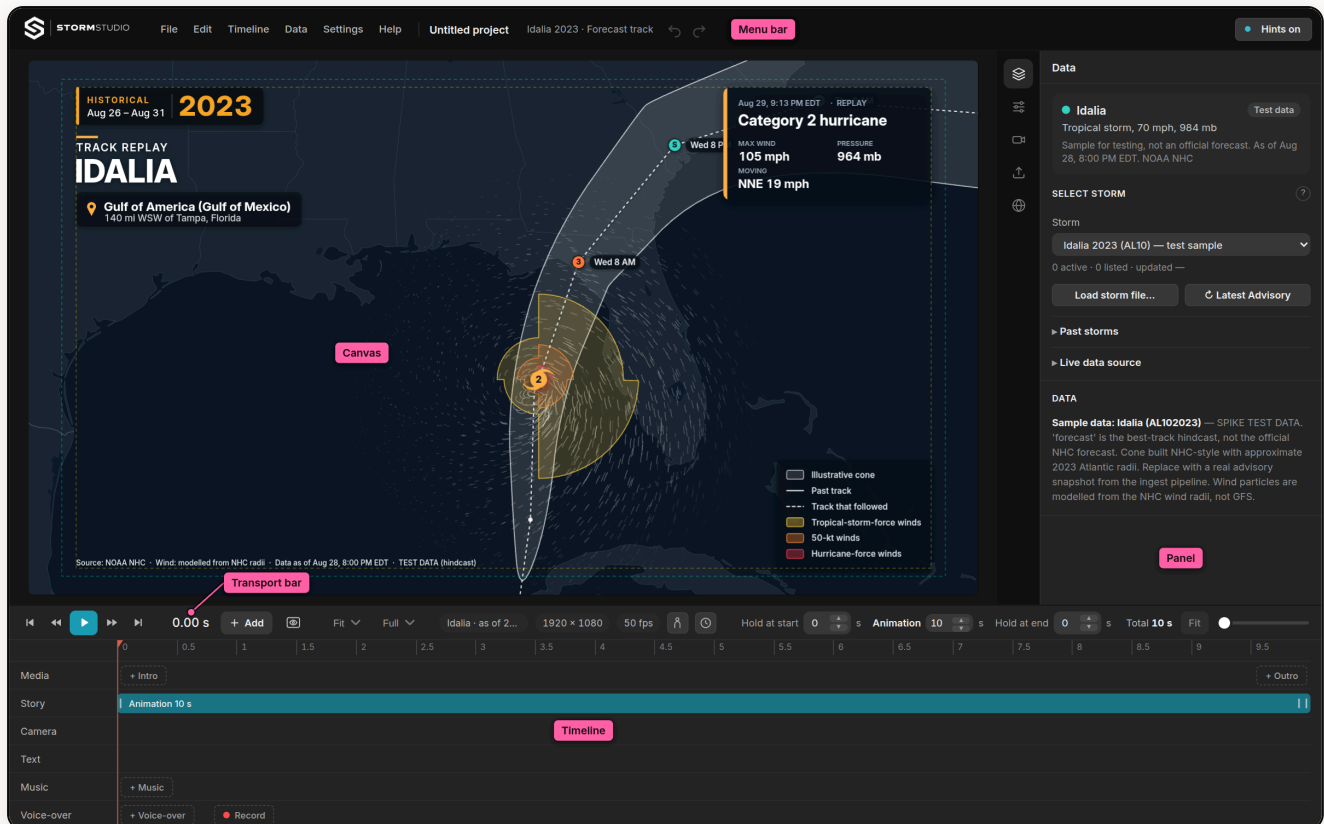
Render a new video on every advisory — schedules

1.2 Get started · Your first video

STORM STUDIO

Finding your way around

The editor has five parts. Once you know what each one is for, you will rarely need to look for anything.

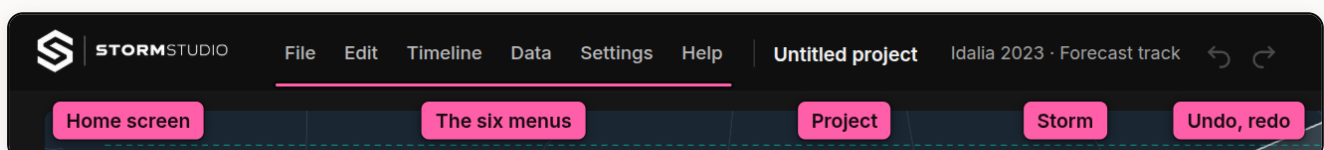


The editor

THE MENU BAR, AT THE TOP

File • Edit • Timeline • Data • Settings • Help. Everything the app can do is somewhere in these six menus — the same things you can reach from the panels and buttons, gathered in one place for when you would rather look them up than hunt for them.

Next to the menus are your project's name, the storm it uses, and the undo and redo arrows. Undo and redo are in the Edit menu too.



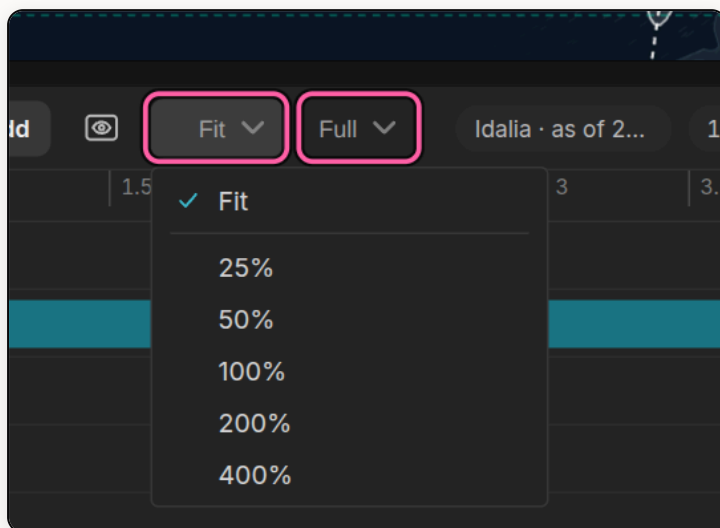
Menu bar

- Click the **Storm Studio** logo to go back to the Home screen.
- **Hints** on the right switches the small explanations that appear as you work on and off.

THE CANVAS, IN THE MIDDLE

The picture itself, exactly as it will be exported. With the safe area guides on (`Settings > Safe area guides in the preview`), the dashed lines show the safe areas — keep your eye inside them and so will every graphic.

Two small menus in the transport bar, just right of the eye button, change only how the preview is shown, never the export. The first, **Fit**, is the canvas zoom (not the timeline's own **Fit**, at the far right of the bar): Fit, or 25% to 400% of the video's own pixels; a frame bigger than the view scrolls, and the middle mouse button drags it. **Full** is the preview's resolution: Half, Third or Quarter draw quicker, and Auto draws at Half while playing and in full when it stops.



Canvas zoom and preview resolution

THE PANEL, ON THE RIGHT

Five icons down the right edge each open a panel beside them:

ICON	PANEL	WHAT IT IS FOR
Layers	Data	Which storm and which advisory
Sliders	Style and brand	The look, the design of each graphic, your brand
Camera	Camera	How the video moves

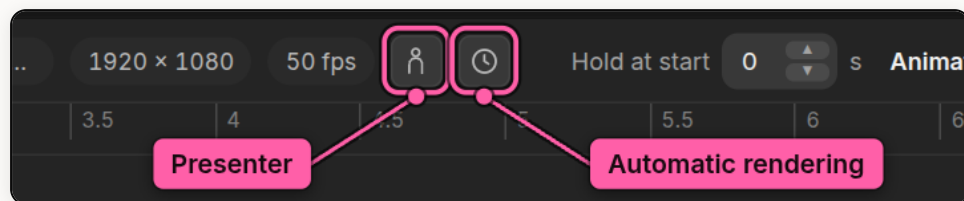
ICON	PANEL	WHAT IT IS FOR
Upload	Canvas and export	Frame size, file type, sound level
Globe	Display and units	Wind and pressure units, language, time zone

Hover over any icon to see its name.

THE TRANSPORT BAR, BELOW THE CANVAS

Play and step through the video, see where you are in it, and set how long it is: a hold at the start, the storm's animation, and a hold at the end.

Two icon buttons sit together in the middle: the **presenter** button, which leaves space on one side of a widescreen picture for someone to stand, and the **clock**, which opens automatic rendering. The clock turns teal when a schedule is switched on, and amber while it is making a video.



Presenter and clock

THE TIMELINE, ALONG THE BOTTOM

One row for each kind of thing in your video — **Media** for intro and outro pictures and clips, **Story** for the storm's own animation, **Camera**, **Text**, **Music** and **Voice-over**. Anything on a row can be dragged to move it, stretched from either end, or clicked to show its settings in the right-hand panel.

The **+ Add** button, and the Timeline menu, put new things at the red playhead.

HELP WHILE YOU WORK

Every panel can explain itself. Click the small ? at the top of any section of a panel for a few sentences on what its settings do. Press F1 to open this manual, and ? on its own for every keyboard shortcut.

WHAT NEXT

[Save your project](#)

[The panels in detail](#) — every setting, one by one

1.3 [Get started](#) · [Finding your way around](#)

STORM STUDIO

Saving your work

A project is one file that holds everything about a video — the storm, the look, the camera, the timeline — so you can open it again tomorrow, or on another computer, and carry on.

SAVE AND SAVE AS

- **File > Save** writes your changes back to the project's own file.
- **File > Save as...** saves a copy under a new name, or in a new place. The first time you save a new project, Save asks where to put it.

Projects end in `.stormproj`.

Storm Studio does not save for you yet. If you close the tab with unsaved changes, the browser warns you first. But if the tab crashes — most often from running out of memory during a very long export — anything since your last save is lost. Save before you export anything long.

YOUR VIDEOS AND SOUNDS TRAVEL WITH THE PROJECT

Pictures go inside the project file. Video clips, music and voice-over files are too large for that, so Storm Studio keeps copies of them in a folder called `media`, next to the project file.

Keep the two together. Copy the project and its `media` folder to another computer and it opens there with everything in place.

BRAVE NEEDS ONE SETTING

Chrome and Edge can make the `media` folder as they come. In Brave, first switch on its File System Access setting (type `brave://flags/#file-system-access-api` in the address bar). Without it, your clips still work, but are not copied beside the project.

FINDING A PROJECT AGAIN

The Home screen lists your recent projects with a small picture of each. Click one to open it.

You can also choose a **projects folder** on the Home screen, to keep all your work in one place.

WHAT NEXT

[What to do when something goes wrong](#)

[Make the same video for phones](#)

Render a new video on every advisory

By the end of this page Storm Studio will make a new video by itself each time a new advisory comes out, while you are away.

About twenty minutes the first time · Needs the helper on your computer

BEFORE YOU START

Automatic rendering needs a small program, the **helper**, running on your computer. Start it with `setup-helper.bat` and choose **1**. The clock button below the canvas turns from grey to teal once a schedule is on, so you can always see whether anything is waiting to run.

SIX STEPS

1

Make the video by hand

In the editor, with its look, intro, outro and music, as for any video. This is the video every automatic one will be made from.

2

Start a schedule

Click the clock below the canvas, or choose `File > Automatic rendering...`, then **New schedule**. **Quick** asks three things: the storm, when the first video is made, and what follows — for example **Every new advisory**. The rest is set for you from the project as it is now. **All settings** shows every choice, including the formats, the output folder and YouTube.

3

Save the schedule

A copy of the project is kept with the schedule, and any file the media library does not have yet is copied, with progress. The schedule starts only when every file is there.

A schedule never makes half a video. Before the first frame, every file is looked for. If one is missing, no video is made, and the schedule's card and the Activity list say which file.

4

Leave it running

Advisories come every six hours, at 03:00, 09:00, 15:00 and 21:00 UTC, and a special one can come at any time. With no storm to render, nothing is made. Each video goes to the schedule's renders folder; click the picture on its card to open it.

5

Change something

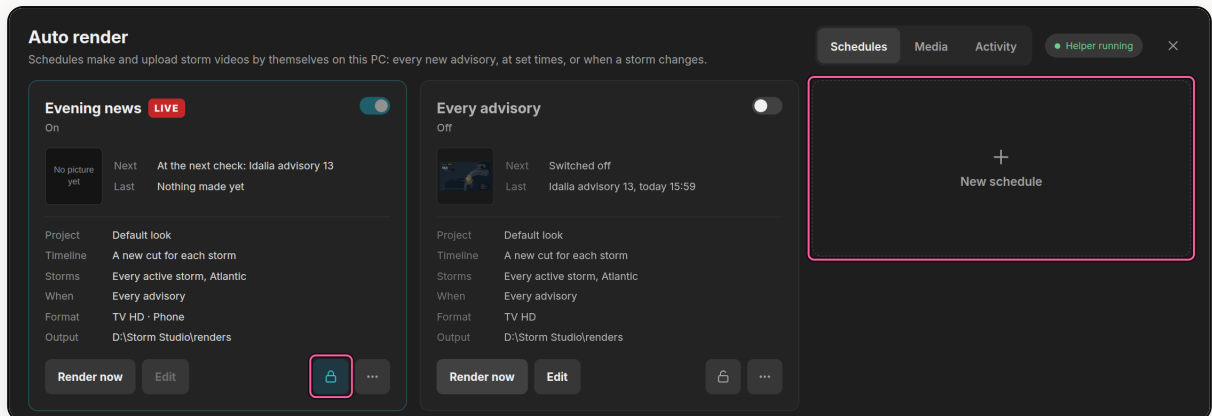
Change the project in the editor, then open the schedule with **Edit**. On its **Project** tab choose **This project, as it is now in the editor**, and save it. The copy is renewed and only new files are copied.

Work in the editor never changes a video that is due. Until you save the schedule with the new project, every render uses the copy it already has.

6

Lock it

When a schedule is how you want it, click the lock on its card. A locked schedule shows **LIVE** and cannot be changed or deleted by accident. Unlock it to change it.



Automatic rendering: a locked schedule, one switched off with its last video, and New schedule

GOOD TO KNOW

- **Duplicate**, in the card's ... menu, copies every setting — the usual way to make the same schedule at another format. The copy is switched on when you save it, if the original is on.
- **AUTO › Media** lists every file the schedules use. A file no schedule uses can be removed there; the app never removes one by itself.

WHAT NEXT

When something goes wrong — the helper, missing files and locked schedules

2.3 How to · Render a new video on every advisory

STORM STUDIO

Make the same video for phones

By the end of this page you will have a vertical 9:16 video of the same storm, made from the project you already have, without building anything again.

About five minutes

THREE STEPS

1

Change the frame

Choose `Settings > Canvas size` and pick **1080×1920**, or click the 9:16 tile in the Canvas panel. The picture turns upright at once.

One project, every shape. The camera, the graphics and the timeline all reflow to the new frame. Nothing is rebuilt, and switching back to 16:9 gives you the widescreen video exactly as it was.

2

Check the graphics

On a phone the whole tall frame is shown small, so every graphic is drawn bigger in a vertical frame — half as big again unless you change **Graphics size in vertical video** in Canvas, Layout. Your project keeps its own sizes, so the TV video stays at TV sizes.

In a 9:16 frame, with the safe area guides on

(Settings > Safe area guides in the preview), the preview also shows in red roughly where YouTube Shorts puts its own title and buttons over the video. It is only a guide: it is never exported, and nothing is kept out of it for you.



The 9:16 frame with the YouTube Shorts guide

If you moved a graphic on its own (**Move across, Move up or down**), the move applies in both frames. Look at each one.

Export it

Choose **File** > **Export video...**, then click **Export video** and pick where to save, as for any video.

THE PRESENTER SPACE

The space for a presenter exists only in widescreen 16:9. In a vertical frame it is left out, and your setting is kept for when you go back.

GOING FURTHER

- For a video made only for social media, the **Social vertical** camera template, under **More** in the Camera panel, frames the storm for a tall picture from the start.
- A schedule can make the widescreen and the vertical video of every advisory together: give it both formats. See [Render a new video on every advisory](#).

WHAT NEXT

[Put your logo on it](#) — it sits right in every frame shape

[Render a new video on every advisory](#) — both formats, made for you

Put your logo on it

By the end of this page your logo, your colour and your font will be on the video, and on every video you make after it.

About ten minutes · You need your logo as a PNG or SVG file

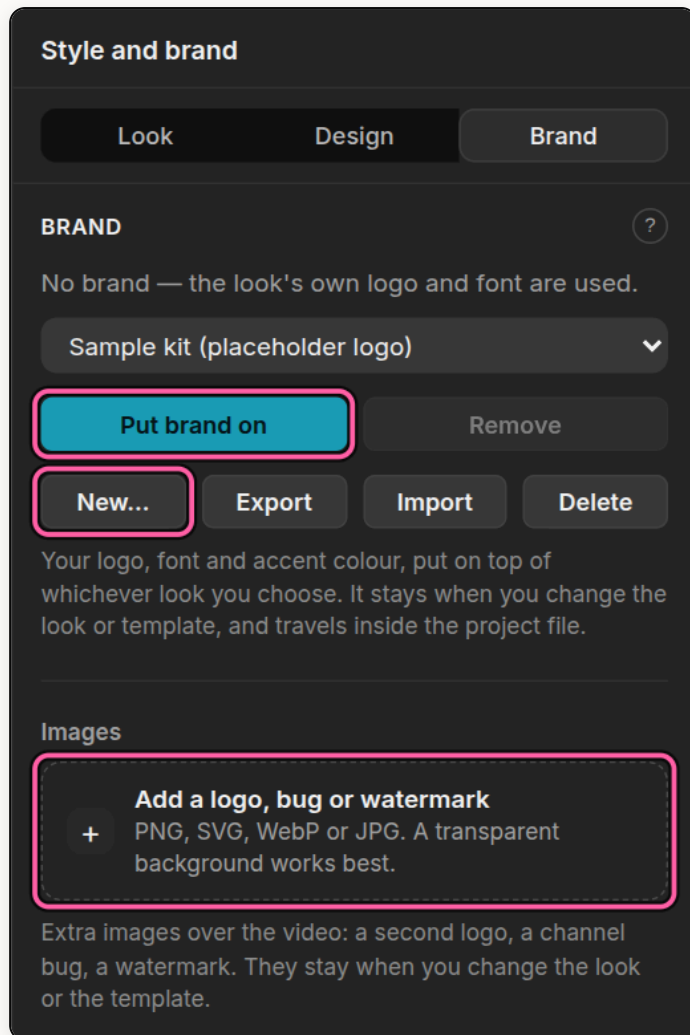
YOUR BRAND

A **brand** is your logo, font and accent colour, put on top of whichever look you choose. It stays when you change the look or the camera template, and it travels inside the project file.

1

Make the brand

Open the Style panel and choose **Brand**. Click **New...**, give it a name, choose your accent colour, and add your logo (PNG or SVG) and your font (TTF, OTF or WOFF2). Leave the font or the logo empty to keep the look's own. Then click **Save brand**.



Style and brand › Brand

2

Put it on

Click **Put brand on**. Your logo, font and colour are on the video at once.

Taking it off brings everything back. **Remove** returns the look underneath exactly as it was, so trying a brand is always safe.

MORE PICTURES: A BUG OR A WATERMARK

Under **Images** in the same panel you can add more pictures over the video, such as a second logo, a channel bug or a watermark. Click **Add a logo, bug or watermark**, click the image in the list, then set it up:

- **In a corner:** it takes the corner itself, and the other graphics there stack inward from it. Nothing is covered.
- **Free:** it sits exactly where you put it on a five-by-five grid, and may cover other graphics. **Behind the graphics** puts it under the title, card and legend.
- **Size** is the width as a share of the short side of the frame, so an image is the same size in 16:9 and 9:16.
- **Appears:** the whole video, or only between two times, fading in and out.

To use the same images in every project, choose **Keep these images with brand**.

WHAT NEXT

[Make the same video for phones](#) — your brand reflows with it

[Render a new video on every advisory](#) — with your brand on every one

The panels, one by one

What every panel and setting does, in the words of its  pop-up in the app.

3.1 Project

Your video is one **project file** (.stormproj). It keeps everything needed to render it again exactly: storm, template, camera, look, brand and texts.

- **File** (top left): New project, Open, Save (Ctrl+S), Save as and Export video. Click the project name to rename it; a dot after the name means there are unsaved changes.
- **Undo / Redo**: every change can be undone (Ctrl+Z / Ctrl+Shift+Z). A slider drag counts as one step.

3.2 Select storm

1. Pick the storm. **Live now** lists active NHC/CPHC storms from your data server (every advisory is kept: pick an older one under **Advisory**). **Recent storms** are ones that ended in the last weeks. You can also load a storm file. Every storm is checked before use, and the one you use is saved inside the project.

Past storms (folded under the storm list): search by name and/or year: Atlantic storms since 1851 and Eastern/Central Pacific since 1949 (NHC HURDAT2, built into the app), plus all other oceans since 2022 (IBTrACS), by name or year. It is replayed "as if live": pick the moment under **Replay as of**; what happened next plays as the forecast, with an illustrative cone, and every frame says it is a replay. A **Historical** badge with the dates and a big year sits above the title so it can never be mistaken for a current storm (restyle or hide it in Design → Historical badge).

Location line: under the title, every storm (live or historical) says where it is in plain words, e.g. "Gulf of Mexico · 200 mi SW of Tampa, Florida" or "Over Florida". It follows the storm as it moves (switch that off in Design → Location line to keep the advisory position). Distances use miles when wind is in mph, otherwise km. **Name for the Gulf**

(Design → Location line) chooses what the line calls the Gulf while a storm is in it: Gulf of Mexico, Gulf of America, both names (the default), or no sea name.

Landfall on live storms is *estimated* where the official forecast track meets land (NHC does not publish a landfall point), and labelled "near ...".

Another storm, advisory or replay moment for a project that is already made keeps its timeline as it is: the length, the holds, every pin at the same second of the video (it shows whatever the new storm is doing then), texts, the intro and outro, the look and your Design changes. The camera, the storm's clock and the build-on are worked out again for the new storm. Check any text you wrote about the first storm. A click on a template still builds a fresh cut.

The **card on top** shows the storm in use: its strength, the time of the data, the source, and whether it is **Live**, a **Replay** or **Test data**. A live advisory more than 9 hours old is marked in red: check for a newer one before it goes out.

3.3 Camera: template, framing, presenter

Click a template. One click builds a complete video from the storm's own data: timing, camera moves and what is shown. Click another template to try it. Ctrl+Z goes back.

- **Forecast track:** the whole cone, then follow the forecast in to landfall.
- **Full track build-up:** the whole storm, with path, points, labels and cone building in order.
- **Landfall close-up:** tight on the eye as it comes ashore.
- **Past track recap:** from the young storm to now.
- **More:** a locked-off full-track frame, and a 9:16 social version.

Zoom / margin makes the whole scene closer or wider; **Pan** nudges it left/right and up/down. They apply to the whole video, are kept when you rebuild, and a double-click resets each one.

Presenter on screen keeps one side free for a weather presenter: choose left or right and how much space. The camera moves the storm into the free side; graphics on that side move across, or hide while the presenter is on (they stay in your look). The safe guides show the presenter area. The presenter space is for 16:9 video (HD and 4K) only: in vertical, portrait and square videos it is left out, and your setting is kept. The person button in the top bar switches it Off, Left, Right.

Fine-tune camera (folded) lets you change the shot, time span, motion and how graphics appear, one by one. The template tile then shows *fine-tuned*; **Back to template** undoes it.

3.4 Canvas

- **Size:** 16:9, 9:16, square and more. Graphics and camera adapt to each shape automatically.
- **Animation:** how long the storm animation lasts, from 2 seconds to 5 minutes (type the seconds: 300 for five minutes). A long video takes long to export, and its file is large: the line under **Quality** says how large.
- **Hold at start / end** (in the timeline header, or drag an edge of the Story lane): extra seconds before and after the animation. The frame waits while the wind and the eye keep moving.
- **Safe areas:** **Action safe** and **Title safe** as a share of the frame. **EBU** (93% and 90%) is the standard for HD and 4K; **Legacy** (90% and 80%) is the older, tighter one. **Keep graphics inside title safe** holds every graphic inside the inner frame; switched off, they may go out to action safe. The guides in the preview follow these settings and are never exported.
- **Graphics size in vertical video:** a phone shows the whole tall frame small, so in a frame taller than wide every graphic is drawn this much bigger ($\times 1.5$ unless changed; all of it at 9:16, about a third of it at 4:5, which has less room), on top of its own Scale. The project keeps its own sizes, so one project gives the TV video at TV sizes and the phone video bigger. In a 9:16 frame the preview also shows, in red, roughly where YouTube Shorts puts its own title, channel name and buttons over the video (a guide only: never exported, and nothing is kept out of it).
- **Shrink graphics that are too wide:** a graphic wider than the space it may use is scaled down to fit. **Mirror for right-to-left languages:** in Arabic and Urdu every corner graphic swaps sides.
- **Pins:** see **Timeline** in the manual.
- **Hide overlays** (the eye button by the time, or **O**): preview only map and storm, without titles, legend or labels, while you work on the camera. The export is not affected.

3.5 Display & units

- **Safe guides:** title- and action-safe frames. Only on screen, never exported.
- **Satellite:** NASA imagery under the map (needs internet).
- **Units:** wind in mph, kt, km/h or m/s; pressure in mb or hPa.
- **Language:** all generated words (status, directions, dates). The storm word follows the ocean: hurricane, typhoon or cyclone. Non-English wording is a draft: have a native speaker check it before broadcast. Text you type yourself is not translated.
- **Storm clock:** the time that moves with the storm on the info card and the other graphics, in hours and minutes, or in **whole hours** (8:00, 9:00 ...), which can be read while the storm moves fast. The time of the data ("as of") and the forecast points keep their exact time.
- **Time zone:** every time on the video is shown in this zone, with its name for that time of year: EDT in summer and EST in winter, CEST and CET, BST and GMT.

3.6 Style

Choose how the video looks. Everything here is a starting point you can change.

- **Design packs:** complete broadcast styles: map colours, graphic layouts, fonts, sizes and category colours. A pack changes only the look: your time zone, units and language stay as they are.
- **Basic looks:** plain Night, Daylight and High contrast.
- **My looks:** your own saved looks.

To make your own: pick the closest look, adjust anything in **Design**, then **Save my look**. Export and Import share looks between computers.

A look never contains your brand. The brand is put on top separately, so one brand works with every look.

3.7 Brand

Your identity: **logo, font and accent colour**, put on top of whichever look you choose.

- **Put brand on / Remove:** removing brings the look underneath back exactly.

- **New...:** name, accent colour, logo (PNG/SVG) and font (TTF/OTF/WOFF2). Leave font or logo empty to keep the look's own.
- The brand stays when you change the look or the template, and it travels inside the project file.

Images: extra pictures over the video, such as a second logo, a channel bug or a watermark. Add one, click it in the list, then set it up.

- **In a corner:** it takes the corner itself, and the other graphics there stack inward from it. Nothing is covered.
- **Free:** it sits exactly where you put it on the five-by-five grid and may cover other graphics. **Behind the graphics** puts it under the title, card and legend.
- **Size** is the width as a share of the short side of the frame, so an image is the same size in 16:9 and 9:16.
- **Appears:** the whole video, or only between two times (it fades in and out). The times count from the start of the storm video, after any intro.
- **Keep these images with brand** saves them with the brand that is on, so they come with it in every project.

3.8 Design

Every element on its own: pick it from the list (eye, cone, tracks, labels, title, info card, legend, wind, map...), then change colours, sizes, layouts and shadows.

The switch on each row shows or hides that element. Click a row to open its settings under it, click it again to close them. The search box finds an element or a setting by name.

Layout check (the line on top) looks through the whole video for a graphic that leaves the safe area or sits on another one. Click a problem to go to that moment and open that graphic. **Order in its corner** (in a graphic that shares its corner) moves it nearer the corner or further from it. The historical badge and the location line under the title move with the title; a location line in a corner of its own has its own place there. The eye has a **Symbol opacity** and a **Number opacity** of its own. **Move across** and **Move up or down** move one graphic on its own, even out of the safe area; the others in its corner stay where they are (the historical badge and a location line under the title go with the title). The layout check says if it now overlaps or leaves the frame. One project with a TV and a phone format moves it the same in both: check each.

Ticker: type the messages one per line, or load them from a file (TXT, CSV, XML or RSS, JSON). **Motion:** still on one line, Scroll, or One at a time. Text from a file shows a small "Source" credit at the right end of the bar. A file that cannot be read never clears the ticker: the last messages stay.

Changes show immediately and can be undone. To keep a set of changes for other videos, use **Save my look** in Style.

3.9 Export

- **Frame rate:** 25, 50, 59.94 fps and others (for the MP4 and the PNG sequence).
- **Export video:** the finished video. Every frame is rendered completely, so it can take a while; Cancel stops it.
- **Quality:** Small (web and social), Standard, High (broadcast), Maximum (for re-editing) or a custom bitrate in Mbit/s. The line underneath shows the bitrate and roughly how big the file will be. Higher keeps fine map detail and the wind particles sharper. If the computer's encoder can't go that high at this size, the export steps down and says so.
- **Save frame as image:** the frame at the playhead as PNG (keeps transparency) or JPG, at the full canvas size.
- **PNG sequence with alpha:** separate layers (map, wind, storm, labels, graphics) with transparency, for compositing in your editing software. Tick the layers you want.
- **Spike test:** renders the technical test set (4K and 9:16).

3.10 Sample data

This storm is **test data** for building the app: a past storm replayed as if live. Real advisories come later from the data pipeline. The wind particles are modelled from the storm's wind radii and labelled as such.

3.11 Timeline

Along the bottom of the window. The **header** has play and the jump buttons, the time, **+** **Add**, the hold and animation lengths, **Fit** and zoom.

- **Ruler:** click or drag to move the red playhead. A click on an empty part of a lane does the same.
- **Media:** an **intro** plays before the storm video and an **outro** after it, and clips can go **in the middle:** the storm video waits while one is on and carries on from the same moment after it. The video is longer by their length. Each is a picture (PNG, JPG or WebP) or a video file (MP4, MOV or WebM). Add an intro or an outro with **+ Add** or the buttons on the lane, and a clip in the middle with **+ Add, Insert media** (a picture or a video, put in at the playhead; up to eight in the middle, each at least a second of storm video from the next and from both ends). Click a block for its settings: when it comes on (a clip in the middle), length, **Fill the frame** or **Show all of it**, a slow zoom (pictures), and a cut or a half-second cross-fade where it joins the storm video. Drag a block's end to change its length; drag a clip in the middle to move it; **Delete** removes it. The graphics, the ticker, the pins and the texts belong to the storm video, so they are not on these clips; a text or a pin that runs across a clip in the middle carries on after it.

A **video** plays from its start for as long as the clip lasts: up to its own length, five minutes at most. Its own sound is heard with it, in the preview and in the exported MP4: **Its sound** in the clip's settings turns it off or sets how loud it is (up to 200% for a quiet one), and a small speaker on the block shows that it is heard. The sound runs while the clip is on its own; during a cross-fade the picture holds still and is silent. The music is lowered under it as under a voice-over, unless that is switched off in the music's settings. A video from an older project stays silent until its sound is turned on. **Leave out at its start** starts a video that many seconds into its file; **Sound fades in** and **Sound fades out** bring its own sound in and out over the seconds you set. Pictures are saved inside the project file. A video file is not: it stays where it is on this computer and the project remembers which file it is. In Chrome and Edge the app finds it again when the project is opened (click the clip if the browser wants your OK); in other browsers, on another computer, or after the file was moved or changed, choose it again with **Replace**. An export stops with a message if a video file is missing. Automatic shows cannot use video files yet.

- **Story:** hold at start, the animation, hold at end. Drag an edge to change one (whole seconds).
- **Camera:** the template makes the camera move by itself; this lane is for the pins you add on top of it.

- **Text:** texts that come on over the storm video for a while and go again. Add one at the playhead with **+ Add** or **T**, then type; it starts as a caption. In its settings choose the kind: **Key messages** (a heading and up to six lines, on the left or the right), **Headline** (a bar along the bottom), **Full screen** (the frame is dimmed and the text stands in the middle) or **Caption**. It can come on with a cut, a fade or a wipe, and may use the ticker's tokens such as {NAME} and {WIND}. Drag a block to move it, drag an end to change its length; texts that are on at the same time take a row each. Colours and font come from the look, and a panel keeps clear of the other graphics. A text keeps its time in the video: if you later add a Wait or change the length, check it still falls where you want it. **Over pictures and videos** (in its settings): the text stays on top while a picture or video from the Media lane is on screen, and it can lie on the intro or the outro; its block on the lane shows two stacked squares. Such a text counts the seconds of the whole video, so it does not wait while a clip in the middle is on. With the playhead on a clip, **+ Add, Text** puts a text over that clip. The storm graphics are not drawn while a clip is on screen.
- **Music:** one piece of music under the whole video, the intro and the outro included. Add it with **+ Add, Music** or the button on the lane (MP3, WAV, M4A, OGG or FLAC, up to ten minutes). Its block shows the sound, and a white line that is the volume the viewer hears. Click it for its settings: **Volume**, **Fade in**, **Fade out**, where it starts and how long it is on (left alone, it plays to the end of the video or of the music). Drag the block to move it, drag its right end to make it shorter; the speaker beside the lane's name switches it off without removing it; with its settings open, **Delete** removes it. Press play to hear it with the preview. The exported MP4 gets a sound track (AAC where the browser can write it; otherwise Opus, and the export says so). A PNG sequence has no sound. Like a video, the sound file is not saved inside the project: it stays where it is on this computer, and the app finds it again in Chrome and Edge; elsewhere choose it again with **Replace**. Automatic shows cannot use a music file yet.
- **Voice-over:** spoken commentary from sound files (MP3, WAV, M4A, OGG or FLAC, each up to ten minutes). Add a clip at the playhead with **+ Add, Import voice-over** (the empty lane has a button for it too). Click a block for its settings: **Volume** (up to 200% for a quiet recording), where it starts, how long it is on, and how much of the recording to leave out at its start. Drag a block to move it, drag its left end to leave out the start, its right end to cut it short; clips that are on at the same time take a row each and are heard together. The speaker beside the lane's name switches the whole voice-over off; **Delete** removes the selected

clip. The music is lowered while a clip is on and comes back after it: its settings have **Lower under voice-over** and **Lower by**, and the white line on its block shows the dips. If the sound goes over full level, the export says where. A clip's place is a second of the whole video: it stays there when you later change the picture's timing, so add the voice-over last. Like the music, a sound file is not saved inside the project; automatic shows cannot use one yet. **Recording: + Add, Record voice-over** (or **Record** on the empty lane) records with the microphone from the playhead. The browser asks for the microphone, a 3-2-1 count runs, then the video plays without sound (so the music is not picked up) while you speak; **Space**, **Enter**, **Esc** or **Stop** ends it and keeps the take, as does the end of the video (during the count they cancel it instead). Nothing else in the window answers until it is over. The take becomes a clip where the playhead was. It is kept in this browser; **Save a copy** in its settings saves it as a WAV file, which you need on another computer, or when the app says the browser would not store the take. **Microphone:** during the count, the list in the recording strip chooses which microphone records (the count waits while it is open, then starts again with it); the choice is remembered in this browser. A microphone that has your voice on one side only is recorded at full level. **+ Add, Recordings in this browser...** lists every take kept here, with its date, length and size: save one as a WAV file, or remove one the open project does not use (click Remove twice). A take stays here when its clip is taken off the timeline, until you remove it.

- **Media folder:** video files, the music and voice-over files are not inside the project file. When the project is saved, a copy of each can be kept in a folder named “media” beside the project file; the app asks once to be shown the folder the project is in. The project then finds its files there whatever became of the originals, and on another computer when that folder is copied along with the project file (there, click one of its clips once to show the browser the folder). Projects in the same folder share it, and the app never deletes anything in it. This needs Chrome or Edge, or Brave with its File System Access setting switched on.
- **Sound level** (in **Canvas and export**, above **Export video**): **Loudness** brings the whole video's sound, music, voice-over and video clips together, to one loudness: **-23 LUFS** for European broadcast (EBU R 128), **-24** for US broadcast (ATSC A/85), **-16** or **-14** for online video. The finished mix is measured the way broadcasters measure it and raised or lowered as a whole, the same in the preview and in the export; the line under it says what was measured and what

was done, and the export's summary gives the figures. Its peaks are kept under the limit that goes with the target (−1 dB, −2 dB for the US one): if reaching the loudness would push them over, the sound is raised only as far as they allow, and the line says so and where the highest peak is. After a change to the sound the line says **Measuring the sound...** for a moment; an export always waits for the measure. The figures are those of the whole sound as the app hands it to the encoder: the MP4's sound can read a few tenths of a decibel differently once it is encoded, and a broadcaster may measure only the speech of a long programme, or ask for lower peaks in an encoded file, so check their delivery rules. With Loudness **Off**, **Master volume** sets the level of the whole by hand (10% to 200%).

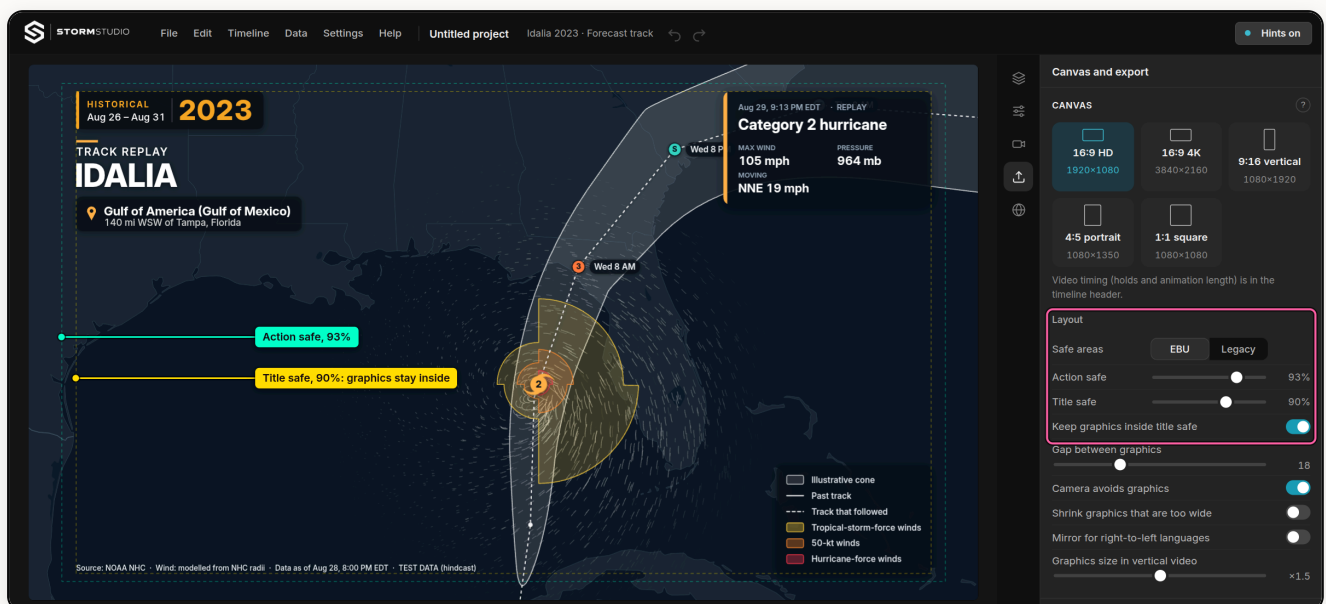
- **Pins** are blocks on the lanes. Add one at the playhead with **+ Add** or a key. Drag a block to move it; drag either end to make it longer or shorter; click it to see its settings in the right panel; Delete removes it. Each pin sticks to its storm moment.
 - **Wait (P, on Story)**: the storm and camera pause for a few seconds; the video gets longer.
 - **Zoom (Z, on Camera)**: the whole frame eases closer or wider (under 100% = closer) and stays there until the next Zoom pin.
 - **Storm (S, on Camera)**: the camera zooms in on the storm's eye, follows it for the hold, then zooms back out.
 - Zoom and Storm can also switch on **Storm waits**: the storm stops while the camera moves.
 - **Speed (R, on Story)**: slow motion or fast forward for a stretch of the story; the video length changes.
 - **Skip (K, on Story)**: cuts forward past a stretch of the story. The cut is covered by a flash in a colour you choose, or by a cross-fade from the picture before to the picture after.
- While you drag a pin, its block shows where it will land. Pins that change the timing (Wait, Speed, Skip) cannot sit on top of one another: the block stops beside the one in the way and a note says why. Moving one of them moves everything after it, because the video gets longer or shorter there.
- On the Camera lane, Zoom pins keep the top row and Storm pins the row under it. A pin the video cannot use is dimmed and says why when you point at it.
- Drag the top edge of the timeline to make it taller or shorter.

Delivering to playout

What Storm Studio writes, what it does not, and the settings that decide whether a file passes a station's checks.

4.1 Safe areas

Safe areas are set in **Settings > Safe areas and layout...** and saved with the project. They apply to the preview guides, every export and every automatic render of that project. Graphics are laid out against the title-safe box, not the frame.



Settings > Safe areas and layout...: the guides on the canvas, the settings in Canvas and export > Layout

PRESET	ACTION SAFE	TITLE SAFE
EBU (default)	93% — 1786 × 1004	90% — 1728 × 972
Legacy	90% — 1728 × 972	80% — 1536 × 864
Custom	set per project	set per project

Pixel sizes are for 1920 × 1080. At that size the EBU preset insets 67 px horizontally and 38 px vertically for action safe, and 96 px and 54 px for title safe. Each margin is the same share of the frame's width and of its height, so a project keeps its margins at 3840 × 2160 and in 9:16.

"Keep graphics inside title safe" is on by default. Switched off, a graphic may reach into action safe. The layout check at the top of the Design list then reports any graphic that leaves the safe area or overlaps another; it does not move it.

4.2 Output

OUTPUT	FORMAT	NOTES
Video (default)	MP4, H.264	Chrome, Edge and Brave. A browser that cannot encode H.264 at that size uses HEVC, VP9 or AV1, in that order.
Sound in the video	AAC, 48 kHz stereo, 192 kbit/s	Opus where the browser cannot write AAC; the export says so.
Still	PNG or JPG	The frame at the playhead, at the full canvas size. PNG keeps transparency.
PNG sequence	PNG with alpha	One sequence per layer: basemap, satellite, wind, storm, labels, graphics. No sound.

Frame rates: 1, 5, 15, 25, 29.97, 30, 50, 59.94 and 60 fps. Canvas sizes: 1920 × 1080, 3840 × 2160, 1080 × 1920, 1080 × 1350 and 1080 × 1080. Sizes are held relative to a 1080-unit short side, so 4K is a sharper render, not an enlargement.

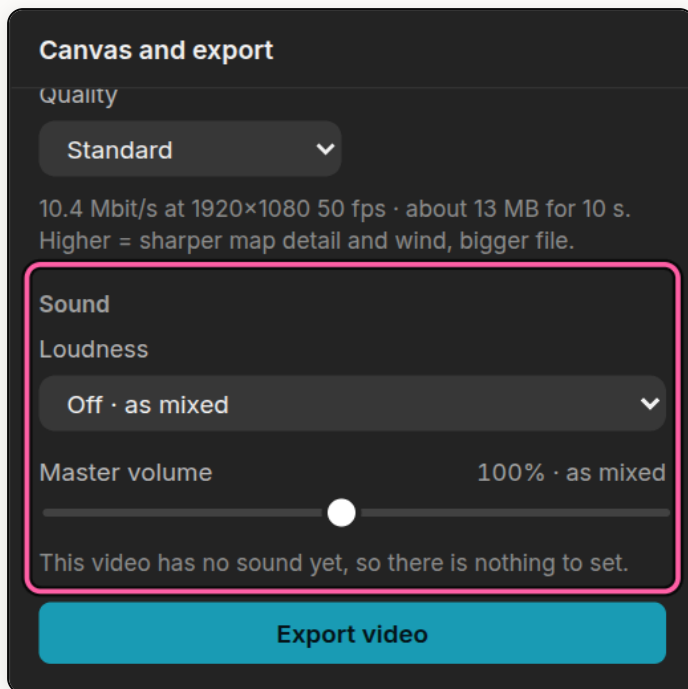
Quality is Small, Standard, High or Maximum, or a bitrate you type in Mbit/s. If the encoder cannot reach the bitrate at that size, the export steps down and reports the bitrate it used.

One renderer draws the preview and every export. Each frame is rendered at exactly its own moment, with the map's clock frozen, and an export stops with a message rather than drop a frame. A file is never a recording of the preview.

4.3 Loudness

Set in the Export panel, above **Export video**. The finished mix — music, voice-over and the sound of video clips — is measured as broadcasters measure it and raised or lowered as a whole, identically in the preview and in the file.

TARGET	STANDARD	PEAKS HELD UNDER	TYPICALLY
-23 LUFS	EBU R 128	-1 dB	European broadcast
-24 LKFS	ATSC A/85	-2 dB	North American broadcast
-16 LUFS	—	-1 dB	Online video
-14 LUFS	—	-1 dB	Most social platforms
Off (default)	—	—	Master volume, 10% to 200%, set by hand



Sound, above Export video in Canvas and export

There is no limiter. A target that would push the peaks over their limit is approached, not forced: the sound is raised only as far as the peaks allow, and the Export panel says so and where the highest peak is.

The figures are those of the sound as it is handed to the encoder. An encoded MP4 can read a few tenths of a decibel differently, and a broadcaster may measure only the speech of a long programme, or ask for lower peaks in an encoded file. Check their delivery rules.

4.4 What is not yet delivered

These are planned and are not in the build. Check them against your station's acceptance spec before committing Storm Studio to a feed.

Not available today: ProRes 422 HQ and ProRes 4444; fill and key as separate video files; Rec.709 tagging and broadcast-legal level clamping; interlaced 1080i; start timecode and drop-frame; bars and tone, slate and countdown.

A PNG sequence is the current route to a finishing suite: export the layers, then grade, tag and wrap them in whatever your facility already uses.

WHAT NEXT

[When something goes wrong](#) — export messages and what they mean

[The panels, one by one](#) — every setting

When something goes wrong

Each problem below is written the way you would notice it. Find the one that matches, and the fix follows.

STORMS AND DATA

No storms are listed on the Home screen

Either no tropical storm is active anywhere right now — which happens for weeks at a time outside the season — or your browser is blocking the storm data.

- If you use an ad blocker, or Brave's Shields, allow Storm Studio's data server and reload.
- If the list is empty because the season is quiet, pick a **past storm** instead. Everything works the same way.

The advisory is marked red

The storm card turns red when the advisory may be out of date: a newer one exists, or it is more than nine hours old. Press **Latest Advisory** in the Data panel to bring in the newest one.

A red card is a warning, not an error. You can still export. Just make sure an older forecast is what you mean to show.

The video says "Replay" or "Test data"

That is on purpose and cannot be switched off. A video of a past storm, or of test data, always says so, so it can never be mistaken for a live forecast.

MAKING THE VIDEO

The export stopped part-way, or is very slow

Almost always the tab was in the background. Browsers slow down work in a tab you cannot see, and the export pauses until you come back. Bring the tab to the front and leave it there until the file is saved.

The export failed with a message

Storm Studio would rather stop than drop a frame, so a file is never quietly missing a piece. The message says why. The usual causes:

- **A media file is missing** — a picture or clip used in the timeline has been moved or deleted. Put it back, or choose it again from the clip's settings.
- **The browser ran out of memory** — most likely on a long or 4K video. Close other tabs and try again; if it still fails, export at HD first.

Save before a long export. If the tab crashes during an export, anything since your last save is lost. Storm Studio does not save for you yet.

There is no "Export video" option, or it fails at once

You are probably using Firefox or Safari, which cannot write H.264 video. Open Storm Studio in Chrome, Edge or Brave.

A video clip is silent

A clip from an older project has no sound until you give it some. Click the clip on the timeline and raise **Its sound** in its settings.

The presenter button is greyed out

The presenter space only exists in widescreen 16:9. In vertical, 4:5 and square frames the button switches off and the space is removed. Your setting is kept for when you go back to 16:9.

A graphic does not fit, or overlaps another

Open the **Design** list in the Style panel. The layout check at the top names any graphic that does not fit. Switch on **Shrink graphics that are too wide** in Canvas, Layout, or give the graphic a smaller scale.

The time on the video shows the wrong zone

Set it in `Settings > Display and units`, **Time zone**. The abbreviation then follows the date — BST in summer and GMT in winter, for example.

SAVING AND OPENING

My video clips are not in the media folder

You are using Brave without its File System Access setting. Type `brave://flags/#file-system-access-api` in the address bar, switch it on, restart Brave, and save the project again.

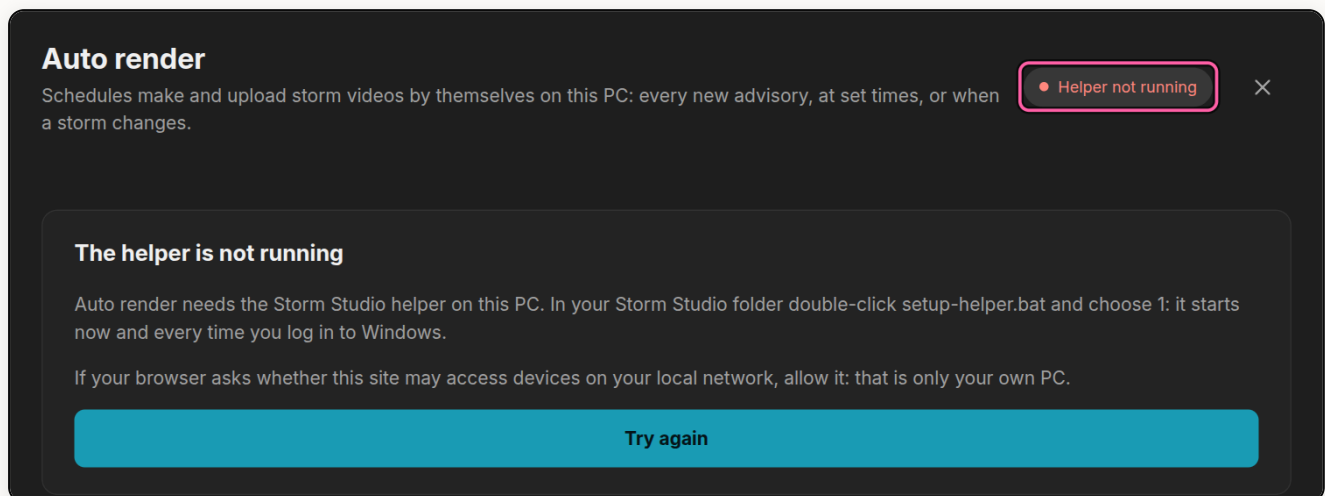
A project opens without its music or clips

The project's media folder was not copied with it. Copy the folder that sits next to the project file, keep the two side by side, and open the project again.

AUTOMATIC RENDERING

Automatic rendering says the helper is not connected

Automatic rendering needs a small program, the **helper**, running on your computer. Start it again with `setup-helper.bat`, choose **1**, and hover over the clock below the canvas to check it has connected.



What automatic rendering shows while the helper is not running

A schedule did not make a video because a file is missing

A picture, clip or sound the project uses is not in the media library. The schedule's card and the Activity list name the file. Open the project in the editor, put the file back, and save the schedule again. Storm Studio never makes half a video, or one without its sound, to get round a missing file.

I cannot change a schedule

It is locked. Click the lock on its card to unlock it, make your change, and lock it again.

STILL STUCK

Press for every keyboard shortcut, or click the beside any setting for what it does. If none of this helps, write to us at support@stormstudio.tv with what you were doing, the storm you had open, and the exact words of any message — that is nearly always enough for us to find it.

Glossary

Every word you meet in Storm Studio, in plain terms. If you see a word in the app and it is not here, that is a gap in the manual — please tell us.

Each entry says what the word means, where you meet it in the app, and what to read next.

A B C D E F G H I K L M P R S T W Z

A

Action safe

The outer safe area. Anything important inside it will be seen on almost every television. Storm Studio uses 93% of the frame by default (the EBU R95 standard).

In the app: Settings > Safe areas and layout... · **See also:** [Graphics safe](#), [Safe area](#)

Advisory

An official forecast for a storm, issued by the National Hurricane Center or the Central Pacific Hurricane Center, usually every six hours. Each one is numbered. Your video always shows one advisory, and says which and when.

In the app: Data panel · **See also:** [Latest Advisory](#)

Animation

The part of the video where the storm moves. Its length is set in the transport bar, between Hold at start and Hold at end.

In the app: Transport bar · **See also:** [Hold](#)

Area history

A small badge that says how many storms have passed near a place since a given year. Off in every project until you switch it on.

In the app: Style panel, Design list

AUTO

See [Automatic rendering](#).

Automatic rendering

Making videos on a schedule, without you, every time a new advisory comes out or at set times. Needs the helper running on your computer.

In the app: the clock below the canvas · [File > Automatic rendering...](#) · **See also:** [Schedule](#), [Helper](#)

B

Basemap

The map under everything: land, sea, borders and coastlines.

In the app: Style panel, Design list, Map

Brand

Your own identity on the video: logo, bug, watermark, colours and fonts. A brand stays with a project whatever look you choose.

In the app: Style panel, Brand · **See also:** [Look](#)

Bug

A small, usually see-through logo that sits in a corner for the whole video, as on most TV channels.

In the app: Style panel, Brand, Images

C

Camera template

A ready-made way for the video to move — Forecast track, Full track build-up, Landfall close-up, Past track recap, Full track (static) or Social vertical. Choosing one builds the whole camera move for you.

In the app: Camera panel · **See also:** [Look](#)

Caption

A short line of text on the video, tied to a moment. One of four kinds of text.

In the app: Timeline, Text row · **See also:** [Text](#)

Category

A hurricane's strength on the Saffir–Simpson scale, from 1 to 5, by its strongest sustained wind. Weaker storms are tropical storms and tropical depressions.

Cone

The official forecast cone. The centre of the storm stays inside it about two times in three. It is **not** a map of where damage will happen — a storm's winds usually reach well outside it.

In the app: Style panel, Design list, Storm · **See also:** [Forecast track](#), [Wind radii](#)

Cross-fade

A soft change from one picture to the next, instead of a cut.

D

Display and units

Wind and pressure units, the language of the graphics, and the time zone.

In the app: the globe icon on the right · [Settings](#) > [Display and units](#)

E

EBU R95

The European standard for safe areas: 93% action safe, 90% graphics safe. Storm Studio's default.

See also: [Safe area](#)

Eye

The centre of the storm, drawn as a symbol on the track. Its look and how see-through it is are set in Design.

In the app: Style panel, Design list, Storm

F

Forecast track

The path the storm is expected to take, drawn as a dashed line with a dot for each forecast time. Also the name of the camera template that flies along it.

See also: [Past track](#), [Cone](#)

Full screen

Text that fills the whole frame for a moment — a title card. One of four kinds of text.

In the app: Timeline, Text row

G

Graphics safe

The inner safe area. Storm Studio keeps every graphic inside it, so nothing is cut off on any screen. 90% of the frame by default. Sometimes called title safe.

In the app: Settings > Safe areas and layout... · **See also:** [Action safe](#)

H

Headline

A line of text above the ticker and lower third, for the main message. One of four kinds of text.

In the app: Timeline, Text row

Helper

A small program that runs on your computer and makes videos for your schedules while the app is closed. Started with `setup-helper.bat`.

See also: [Automatic rendering](#)

Hints

Short explanations that appear as you work. Switch them off once you know your way around.

In the app: Hints, top right ·

Settings > Hints when pointing at a control

Hold

A still moment at the start or end of the video, before or after the storm moves. Hold at start and Hold at end are set in seconds in the transport bar.

In the app: Transport bar

Home screen

Where Storm Studio opens: live storms, your recent projects, and your projects folder. Click the logo to come back to it.

I

Intro, Outro

A picture or video clip at the very start or end of your video — a title, a sting, a channel ident.

In the app: Timeline, Media row · [Timeline](#) > [Intro...](#)

K

Key messages

Two or three short lines of text in a panel, for the points that matter. One of four kinds of text.

In the app: Timeline, Text row

L

Lane

See [Row](#).

Latest Advisory

Brings in the newest advisory for the storm you have open.

In the app: Data panel

Layout check

A line at the top of the Design list that says whether every graphic fits, or names the ones that do not.

In the app: Style panel, Design list

Legend

The key that explains the colours and lines on the map — cone, past track, forecast track, wind.

In the app: Style panel, Design list, Graphics

LIVE

On a storm: it is happening now, and the data is the latest official advisory. On a schedule: it is switched on and will make videos.

See also: [Replay](#), [Test data](#)

Location line

The line under the storm's name that says where it is — "325 mi WSW of Acapulco, Mexico".

Lock

On a schedule: stops it being changed or deleted by accident. Unlock it to edit.

In the app: the lock on a schedule card

Look

How the whole video is drawn: colours, type, which graphics appear and where. You can change looks freely; your storm, timeline and brand stay.

In the app: Style panel, Look · **See also:** [Brand](#)

Loudness

How loud the whole video sounds, measured in LUFS. Storm Studio can set it to a broadcast or online target in one step.

In the app: Export panel, Sound · **See also:** [LUFS](#)

Lower third

A strap of text across the lower part of the frame, as used for a presenter's name.

LUFS

The unit for loudness. Broadcast uses –23 LUFS in Europe (EBU R128) and –24 in North America; most social platforms are around –14.

M

Media folder

A folder called media next to your project file, holding copies of its video clips, music and voice-over. Keep it with the project.

See also: [Project](#)

Mirror for right-to-left

Flips the graphics' corners for Arabic and Urdu, so they read from the right.

In the app: Style panel, Canvas, Layout

Past track

Where the storm has been, drawn as a solid line with a dot for each past position.

Pin

A marker you place on the timeline to change how the video plays from that moment — pause on the storm, zoom in, slow down, or jump ahead. A pin is tied to a moment in the storm's story, so it stays in the right place if you change the video's length.

There are several kinds: **Wait** (pause, key **P**), **Zoom** (**Z**), **Storm close-up** of the eye (**S**), **Speed** (**R**) and **Skip** (**K**).

In the app: Timeline, Camera row · + Add · Timeline > Add pin · **See also:** [Playhead](#), [Timeline](#)

Playhead

The red line on the timeline that shows the moment you are looking at. New pins and texts are added there.

PNG sequence

The video saved as one picture per frame, with a see-through background. Used to put Storm Studio's graphics over other footage in an editing or finishing suite.

In the app: Export panel

Presenter space

Room left on one side of a widescreen picture for someone to stand in front of. The camera keeps the storm on the other side. Widescreen 16:9 only.

In the app: the person icon below the canvas

Project

One file, ending `.stormproj`, that holds everything about a video so you can open it again.

See also: [Media folder](#)

Replay

A video of a past storm, made from the historical records. Always labelled "Replay" on the video.

See also: [LIVE](#)

Row

One line of the timeline for one kind of thing — Media, Story, Camera, Text, Music or Voice-over.

S

Safe area

The part of the frame that every screen will show. Television sets crop the edges, so Storm Studio keeps graphics inside a safe area.

See also: [Action safe](#), [Graphics safe](#)

Schedule

A set of instructions for automatic rendering: which project, which storms, when, in which frame sizes, and where the videos go. In the app's files it is called a *show*.

In the app: the clock below the canvas · See also: [Helper](#), [Lock](#)

Skip pin

Jumps the storm forward in time, with an optional flash or cross-fade.

See also: [Pin](#)

Source credit

The line at the bottom that names where the data came from and when — "Source: NOAA NHC · Data as of...".

Speed pin

Makes the storm move faster or slower for a while.

See also: [Pin](#)

Storm close-up pin

Flies the camera in to the storm's eye.

See also: [Pin](#)

Story

The row of the timeline that holds the storm's own animation and the holds before and after it.

T

Test data

Made-up storm data used for trying things out. Always labelled "Test data" on the video.

Text

Words on the video at a chosen moment: key messages, a headline, a full-screen card or a caption.

In the app: Timeline, Text row · + Add

Ticker

A strip of text along the bottom, still or scrolling, typed in or read from a file.

In the app: Style panel, Design list, Ticker

Timeline

The rows along the bottom of the editor, showing everything in your video in order.

See also: [Pin](#), [Playhead](#), [Row](#)

Track points

The dots along the track, each marking the storm's position and strength at one time.

W

Wait pin

Pauses the storm on a moment while the graphics or a presenter catch up. Key .

See also: [Pin](#)

Watermark

A see-through image over the whole picture, usually a logo.

In the app: Style panel, Brand, Images

Wind radii

How far winds of a given strength reach from the centre: tropical-storm force (34 knots), 50 knots, and hurricane force (64 knots).

In the app: Style panel, Design list, Storm · **See also:** [Cone](#)

Zoom pin

Zooms the camera in or out, on the centre or off to one side.

See also: [Pin](#)