Conservation:
The general concept of conserving a dash is when you only need to press one direction to dash. There are many conditions this can happen in such as:

1) Nathan's state changing (taking damage or tackling a block)
2) Collecting a MAX Item, or Special Item (Roc Wing)
3) Transitioning screens
4) Pressing the opposite direction at the beginning of your dash animation

Something like double-backing is NOT conservation because Nathan is stationary to begin with, and requires two inputs to dash.

Stationary
13 frames after letting go of first forward direction to tap another direction to start dash
-walking + letting go + another direction

Moving (holding a direction) - walking or dashing
15 frames after holding a direction to double back
-is the exact same for walking or dashing

(footnote)
Both thresholds are tied to Nathan's animation which is why the frames match up for for regular speed, and double speed dss.
Nathan's walking and dashing animations only have 3 keyframes. Watch for the start of the second keyframe... there are only a few frames after which you can input a direction to dash, when stationary; or turn around, when dashing.




Special States

Roc Wing

Roc Wing is interesting because it carries over your ground speed at the start (41 frames), and then checks what your air speed should be (42nd frame) and adjusts accordingly. You have those first 41 frames to change directions to conserve your dash.

-this is also true for Extended Wing

Crouching

On its own, crouching completely interrupts dashing. However, if crouching after your dash is interrupted by the states listed below, on the ground, you can conserve your dash. But there are two special points about this

1) You can also turn around while crouching and still conserve your dash. This obsoletes any need to double back .
2) Sliding doesn't negate the conservation either! You can slide any direction and continue to dash right away

Damage

There are 9 frames of lag after taking a hit that doesn't knock you down. On the 9th frame Nathan is stationary (looks like more between states), and on the 10th frame Nathan takes action. If you crouch, or hold up, within 9 frames of taking damage, you can conserve your dash by pressing either left of right.



(Nathan starts flashing on the 10th frame, but the dust shows he's dashing.)

Damage that does cause knockdown still follows the same rules. (Someone else count frames on that one if they want)

Tackle Blocks
Breaking a block is a 43 frame animation, and on the 44th frame you have control over Nathan. Holding up or down will conserve your dash.

Screen Transitions
Last for 22 frames. Simple enough, press the opposite direction before the 23rd frame to conserve your dash.