What is claimed is:

CLAIMS

1. A settling basin of a wastewater treatment system, the settling basin comprising:

a collector chain for driving a plurality of flights through the settling basin, the collector chain including chain links comprising:

a plurality of side bars including a plurality of inner pairs of side bars and a plurality of outer pairs of side bars;

connecting pins configured to join the plurality of side bars, each connecting pin including a first end and a second end on an opposite end of the connecting pin from the first end; and

flanged rollers disposed on the connecting pins between the first ends and second ends, the flanged rollers including tubular central portions and end portions including flanges, one or more circumferential or crossing grooves defined in the central portions of the flanged rollers.

2. The settling basin of claim 1, wherein the flanges include planar outer faces configured to engage inner side surfaces of the plurality of inner pairs of side bars.

3. The settling basin of claim 1, wherein the flanges include internally facing ramped sections having surfaces disposed at an angle of between 30º and 60º relative to surfaces of the central portions of the flanged rollers.

4. The settling basin of claim 1, wherein the flanges extend to heights above outer surfaces of the central portions of greater than zero inches and up to a height corresponding to widths of sidewalls of the plurality of inner pairs of side bars.

5. The settling basin of claim 4, wherein the height corresponding to widths of the sidewalls of the plurality of inner pairs of side bars is two inches.

6. The settling basin of claim 1, further comprising sprockets that the collector chain passes over, the central portions of the flanged rollers having widths corresponding to a width of a widest of the sprockets.

7. The settling basin of claim 1, wherein the flanged rollers are free to rotate about axes of the connecting pins.

8. The settling basin of claim 1, wherein the flanged rollers are formed of stainless steel.

9. The settling basin of claim 1, wherein the flanged rollers are formed of one of a fiber reinforced composite, acetal, nylon, or other materials suitable for the operating environment.

10. A collector chain for driving a plurality of flights through a settling basin of a wastewater treatment system, the collector chain including chain links comprising:

a plurality of side bars including a plurality of inner pairs of side bars and a plurality of outer pairs of side bars;

connecting pins configured to join the plurality of side bars, each connecting pin including a first end and a second end on an opposite end of the connecting pin from the first end; and

flanged rollers disposed on the connecting pins between the first ends and second ends, the flanged rollers including tubular central portions and end portions including flanges, one or more circumferential or crossing grooves defined in the central portions of the flanged rollers.

11. The collector chain of claim 10, wherein the flanges include planar outer faces configured to engage inner side surfaces of the plurality of inner pairs of side bars.

12. The collector chain of claim 10, wherein the flanges include internally facing ramped sections having surfaces disposed at an angle of between 30º and 60º relative to surfaces of the central portions of the flanged rollers.

13. The collector chain of claim 10, wherein the flanges extend to heights above surfaces of the central portions of greater than zero inches and up to a height corresponding to widths of sidewalls of the plurality of inner pairs of side bars.

14. The collector chain of claim 13, wherein the height corresponding to widths of the sidewalls of the plurality of inner pairs of side bars is two inches.

15. The collector chain of claim 10, further comprising sprockets that the collector chain passes over, the central portions of the flanged rollers having widths corresponding to a width of a widest of the sprockets.

16. The collector chain of claim 10, wherein the flanged rollers are free to rotate about axes of the connecting pins.

17. The collector chain of claim 10, wherein the flanged rollers are formed of stainless steel.

18. The collector chain of claim 10, wherein the flanged rollers are formed of one of a fiber reinforced composite or nylon.

19. A method of retrofitting a settling basin of a wastewater treatment system, the method comprising replacing one or more rollers disposed on connector pins of links of a collector chain of the settling basin with one or more respective flanged rollers.